#### **UTILITY CONTACTS**

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AT THE TOME OF PREPARING THESES PANS. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE REASONABILITY TO BE SATISFIED AS TO ITS ACCURACY AND LOCATION OF EXISTING

CHARTER COMMUNICATIONS ATT: MARK KELLY 1480 S. VALLEY CENTER DRIVE

BAY CITY, MI 48706

PHONE: 989-233-9404 mark.kelly@chartercom.com

SANITARY SEWER & WATER MAIN

glenn.chinavare@ci.owosso.mi.us

CITY OF OWOSSO ATT: RANDY CHESNEY, P.E. 301 W. MAIN STREET OWOSSO, MI 48867

989-725-0550 randy.chesney@ci.owosso.mi.us

**ELECTRIC** 

OFFICE: 989-729-3250

OFFICE: 517-374-2375

PHONE: 989-720-6000

PHONE: 989-723-0373

mark.stevens@ftr.com

PHONE: 989-743-2289

brent.klein@daystarrfiber.net

SOIL EROSION AND SEDIMENTATION CONTROL

FAX: 989-720-6060

adam.bertram@cmsenergy.com

CELL: 517-614-8570

tmmahar@cmsenergy.com

CELL: 517-204-9018

CITY OF OWOSSO ATT: GLENN CHINAVARE 301 W. MAIN STREET OWOSSO, MI 48867

**CONSUMERS ENERGY** ATT: TRACY MAHAR 1801 W. MAIN ST OWOSSO, MI 48867

**CONSUMERS ENERGY** ATT: ADAM BERTRAM 530 W. WILLOW STREET P.O. BOX 30162 LANSING, MI 48909

DAYSTARR COMMUNICATIONS ATT: BRENT KLEIN 307 N. BALL STREET OWOSSO, MI 48867

ATT: MARK V. STEVENS 1943 W. M-21 OWOSSO, MI 48847

FRONTIER COMMUNICATIONS

SHIAWASSEE COUNTY HEALTH DEPARTMENT **ENVIRONMENTAL HEALTH DIVISION** ATT: STEVE ALWORDEN 201 N. SHIAWASSEE STREET

FAX: 989-743-2413 salworden@shiawasseechd.net CORUNNA, MI 48817

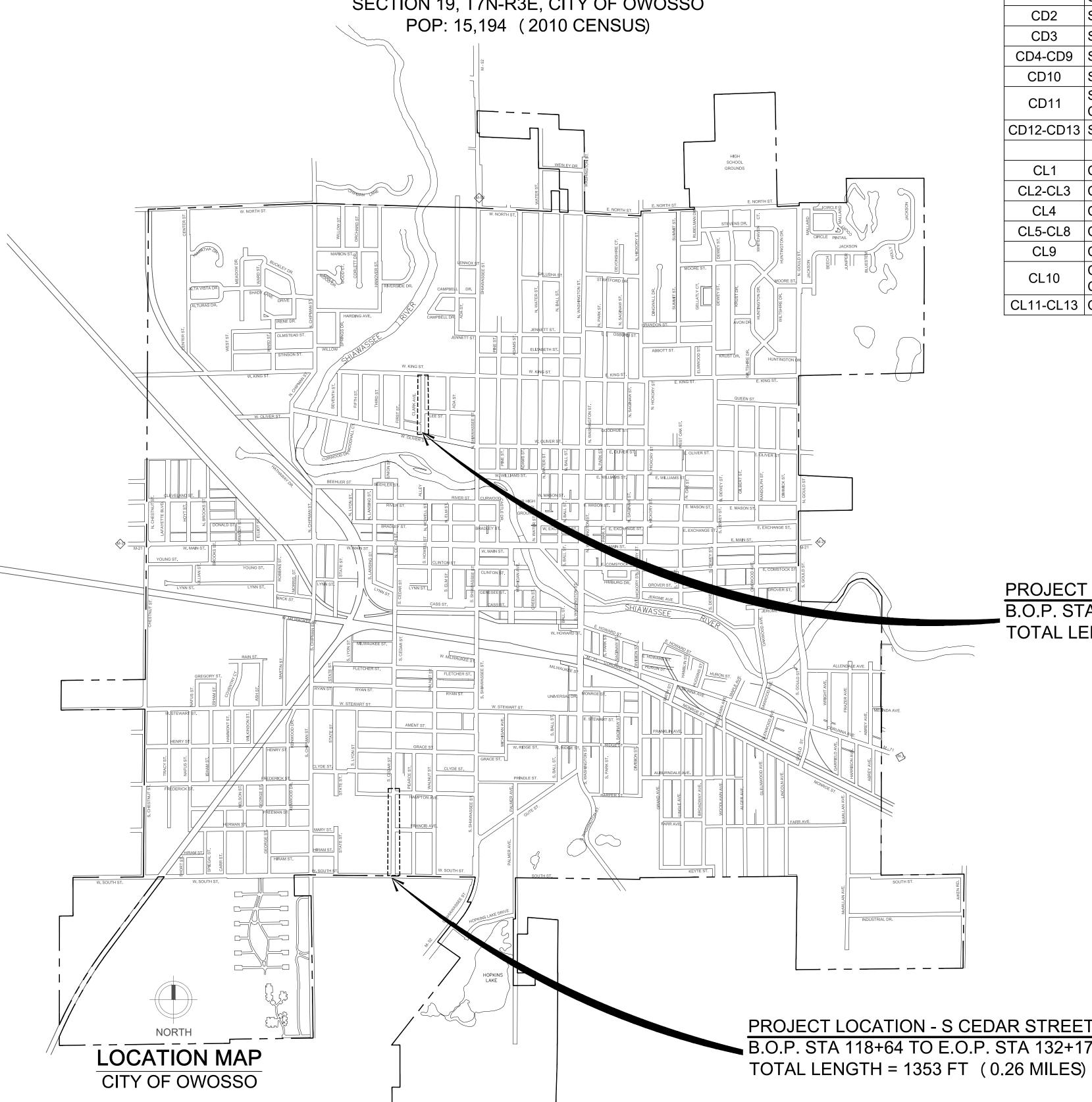
CALL MISS DIG AT 1-800-482-7171 OR 811 THREE DAYS, EXCLUDING SATURDAY, SUNDAY, AND HOLIDAY, BEFORE STARTING YOUR PROJECT.

# CITY OF OWOSSO

# 2020 STREET PROGRAM CONTRACT 2

SHIAWASSEE COUNTY

SECTION 14, T7N-R2E, CITY OF OWOSSO SECTION 19, T7N-R3E, CITY OF OWOSSO



SHEET **DESCRIPTION** NO. COVER SHEET NOTES AND MISCELLANEOUS ESTIMATES D1 ROAD AND STORM SEWER DETAILS WATER MAIN NOTES AND DETAILS WATER MAIN STANDARD DETAILS SESC STANDARD NOTES AND DETAILS D4 S CEDAR ST - ROAD AND STORM SEWER COVER SHEET & TRAFFIC CONTROL PLAN S CEDAR ST - TYPICAL CROSS SECTIONS S CEDAR ST - REMOVAL PLAN S CEDAR ST - ROAD PLAN AND PROFILE CD4-CD9 S CEDAR ST - SOIL BORINGS S CEDAR ST - WATER MAIN COVER SHEET & TRAFFIC CONTROL PLAN CD12-CD13 S CEDAR ST - WATER MAIN PLAN AND PROFILE CLARK AVE - COVER SHEET CLARK AVE - TYPICAL CROSS SECTIONS CL2-CL3 CLARK AVE - REMOVAL PLAN CLARK AVE - ROAD PLAN AND PROFILE CL5-CL8 CLARK AVE - SOIL BORINGS CLARK AVE - WATER MAIN COVER SHEET & TRAFFIC CONTROL PLAN CL11-CL13 CLARK AVE - WATER MAIN PLAN AND PROFILE

PROJECT LOCATION - CLARK AVENUE B.O.P. STA 60+95 TO E.O.P. STA 70+26 TOTAL LENGTH = 931 FT (0.18 MILES)

PROJECT LOCATION - S CEDAR STREET B.O.P. STA 118+64 TO E.O.P. STA 132+17

Know what's **below. Call** before you dig.

# OWOSSO, I NEERING DI OF PUBLIC S CIT

2020 STREET PROGRAM CONTRACT DWRF PROJECT NUMBER 7457-01 PH

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## **MDOT ROAD STANDARD PLANS**

DRAINAGE STRUCTURES	R-1-0
COVER B	R-7-F
MONUMENT BOXES	R-11
COVER K	R-15
COVER Q	R-18
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS	R-28
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CONCRETE CURB AND GUTTER	R-30
BUMPER & PARKING RAIL AND MISC. WOOD POSTS	R-74
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BEDDING AND FILLING AROUND PIPE CULVERTS	R-82
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SEEDING AND TREE PLANTING	R-10
*SPECIAL DETAILS INCLUDED IN PROPOSAL OR MODIFIED IN GENERAL PLANS	

#### **GENERAL NOTES**

#### UNDERGROUND UTILITIES/MISS DIG

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013. THE CONTRACTOR SHALL DIAL 1-800-482-7171 FOR A MINIMUM OF THREE FULL WORKING DAYS. EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBER WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE EXISTING UTILITIES ON THESE DRAWINGS HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND SHALL NOTIFY THE ENGINEER AS TO WHERE POSSIBLE CONFLICT EXIST.

#### **EXISTING WATER MAINS AND SEWERS**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO PROPERLY IDENTIFIED EXISTING WATER MAINS AND / OR EXISTING SEWERS DURING THE CONSTRUCTION OF THE PROJECT.

#### ADJUSTING OF MONUMENT BOXES

ALL GOVERNMENT CORNERS ON THIS PROJECT SHALL BE PRESERVED, WHETHER SHOWN OR NOT. IT MAY BE NECESSARY TO PLACE OR ADJUST MONUMENT BOXES AS REQUIRED.

#### PAVEMENT MARKINGS AND SIGNS

ALL PERMANENT PAVEMENT MARKINGS, SHAPES, AND DIMENSIONS SHALL CONFORM WITH MDOT PAVEMENT MARKING TYPICALS PAVE - 900 SERIES.

#### SOIL EROSION MEASURES

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH DISTURBING ACTIVITIES. PLACE LAWN RESTORATION ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODIBLE SLOPES AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH EITHER SOD OR SEED / MULCH BLANKET AS DIRECTED BY THE ENGINEER.

#### SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND MAINTAINED UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MEASURES SHALL ONLY BE PAID FOR ONCE.

#### RUBBISH DISPOSAL

SEE MAINTAINING TRAFFIC SPECIAL PROVISIONS.

#### MAIL DELIVERY

SEE MAINTAINING TRAFFIC SPECIAL PROVISIONS.

#### STORM SEWER REMOVAL

REMOVAL OF SEWER WITH DIAMETER LESS THAN 12 INCHES, WITHIN THE EXCAVATION LIMITS OF NEW SEWER, IS INCLUDED IN THE UNIT PRICE FOR NEW SEWER AND WILL NOT BE PAID FOR SEPARATELY.

#### STORM SEWER STRUCTURES

ALL STORM ORIFICES TO RECEIVE SEWER PIPE SHALL BE FITTED WITH KOR-N-SEAL FLEXIBLE CONNECTOR (S), OR APPROVED EQUAL CONNECTOR. THE FLEXIBLE CONNECTOR WILL NOT BE PAID FOR SEPARATELY, BUT IS CONSIDERED AS PART OF THE DRAINING STRUCTURE PAY ITEM.

#### STORM SEWER CONNECTIONS

PROPOSED STORM SEWERS SHALL BE CONNECTED TO EXISTING STORM SEWERS WITH A FERNCO COUPLER, OR APPROVED EQUAL, AS DIRECTED BY THE ENGINEER. CONNECTION SHALL BE ACCOMPLISHED WITH COUPLER OF SIMILAR SIZE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. PAYMENT FOR ALL MATERIALS AND LABOR NECESSARY TO ACCOMPLISH THIS WORK WILL NOT BE PAIR FOR SEPARATELY, BUT WILL BE CONSIDERED AS PART OF OTHER WORK ITEMS.

#### STREET APPROACHES

STREET APPROACHES SHALL BE PAID FOR AS PART OF THE MAINLINE PAVING PAY ITMES.

#### STRUCTURE ADJUSTMENTS

ADJUSTMENTS TO STORM AND SANITARY STRUCTURES LOCATED WITHIN THE PAVEMENT OR CURB AND GUTTER SHALL BE PAID FOR AS: Dr Structure Cover, Adj, Case 1.

#### **CURB AND GUTTER**

ALL NEW SECTIONS OF CURB AND GUTTER SHALL BE TIED TO EXISTING CURB AND GUTTER ON BOTH ENDS USING EPOXY COATED #4 BARS.

#### SIDEWALK RAMPS AND SIDEWALKS

SIDEWALK RAMPS SHALL BE COMPLETED IN ACCORDANCE WITH THE MDOT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MDOT STANDARD PLAN R-28 SERIES, EXCEPT AS MODIFIED HEREIN. THE PORTION OF RAMP FROM THE CURB AND GUTTER TO THE LANDING SHALL BE 7-INCHES THICK AS IDENTIFIED ON THE SIDEWALK RAMP THICKNESS DETAIL. THE LANDING SHALL BE 4-INCHES THICK. THE PAY ITEMS FOR Sidewalk Ramp, Conc, 7 inch AND Sidewalk, Conc, \_\_ inch SHALL INCLUDE ALL EXCAVATION AND EMBANKMENT NECESSARY TO CONSTRUCT EACH ITEM AND ALL WORK NECESSARY TO SAW AND TRIM EDGES OF EXISTING CONCRETE. EXCAVATION AND EMBANKMENT WILL NOT BE PAID FOR SEPARATELY.

DETECTIBLE WARNING SURFACES SHALL BE EAST JORDAN DURALAST TM AND POWDER COATED RED, INSTALLED ONTO FRESH CONCRETE, AND IN ACCORDANCE WITH MDOT STANDARD R-28 SERIES. THE WARNING SURFACES SHALL BE 2.5 FEET IN LENGTH SUCH THAT TWO PLATES ARE USED FOR EACH 5 FOOT WIDE RAMP.

SIDEWALKS LOCATED WITHIN RESIDENTIAL DRIVEWAYS SHALL BE 6-INCHES THICK AND WILL BE PAID FOR AS Sidewalk, Conc, 6 inch.

SIDEWALKS LOCATED WITHIN COMMERCIAL DRIVEWAYS SHALL BE 7-INCHES THICK AND WILL BE PAID FOR AS Sidewalk, Conc, 7 inch.

#### LAWN SPRINKLERS / LANDSCAPING

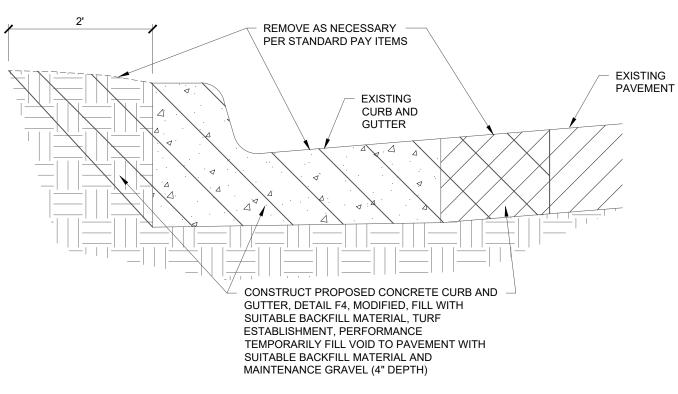
OWNERS OF EXISTING LAWN SPRINKLER SYSTEMS AND / OR LANDSCAPING SHALL BE NOTIFIED (IN WRITING WITH A COPY SENT TO THE ENGINEER) BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF ANY WORK THAT WILL BE DONE THAT WILL AFFECT THOSE SYSTEMS AND / OR LANDSCAPING. IF THE PROPERTY OWNER FAILS TO RELOCATE THE LAWN SPRINKLER SYSTEM PRIOR TO THE CONTRACTOR BEGINNING WORK, AND IF THE CONTRACTOR CUTS THE SYSTEM DURING CONSTRUCTION, THE CONTRACTOR SHALL CAP THE SYSTEM PIPE AND WITNESS THE LOCATION OF THE CAP WITH A WOODEN STAKE FOR THE PROPERTY OWNERS USE. THE CONTRACTOR SHALL PLACE THE SALVAGED SPRINKLER HEADS ON THE BACK OF THE RIGHT OF WAY. IF THE PROPERTY OWNER FAILS TO RELOCATE THE LANDSCAPING PRIOR TO THE CONTRACTOR BEGINNING WORK, THE CONTRACTOR SHALL CAREFULLY SALVAGE THE LANDSCAPING ITEMS AND STOCKPILE THEM ON THE BACK OF THE RIGHT OF WAY OR AT A LOCATION DESIGNATED BY THE ENGINEER FOR THE PROPERTY OWNER. ANY OTHER MODIFICATION TO THE SPRINKLER SYSTEM AND / OR LANDSCAPING IS THE RESPONSIBILITY OF THE OWNER AND IS NOT PART OF THIS CONTRACT. THIS WORK WILL NOT BE PAID FOR SEPARATELY.

#### PROPERTY OWNERS

PROPERTY OWNERS' NAMES, WHERE SHOWN, ARE FOR INFORMATION ONLY, AND THIER ACCURACY IS NOT GUARANTEED.

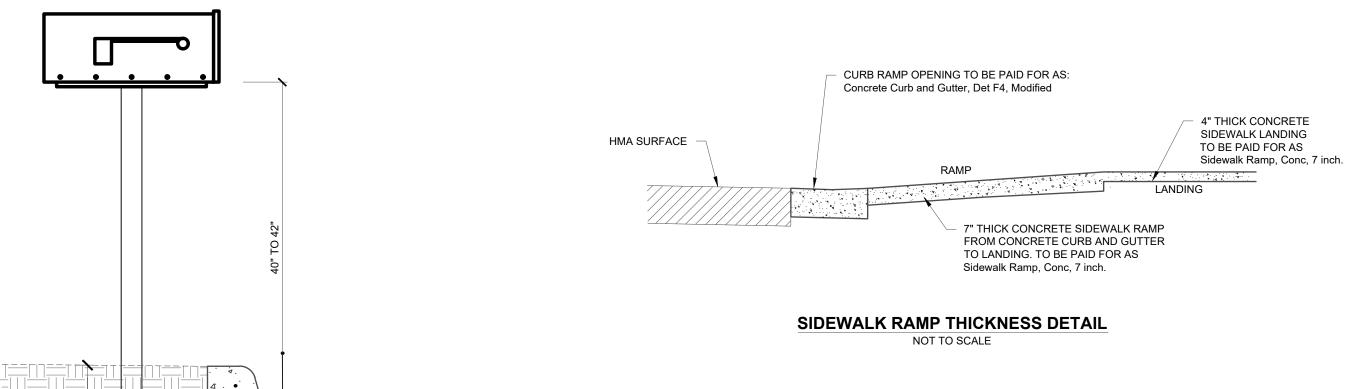
#### MAINTAINING TRAFFIC

REFER TO THE CONTRACT SPECIAL PROVISION FOR WORK RESTRICTIONS RELATIVE TO MAINTAINING TRAFFIC.



#### TYPICAL SELECT CURB AND GUTTER REPAIR DETAIL

NOT TO SCALE



5-1/2"

3500 PSI @ 28 DAYS

**CONCRETE CURB AND GUTTER** 

**MDOT F4 - MODIFIED DETAIL** 

NOT TO SCALE

COMPACTED SAND BASE

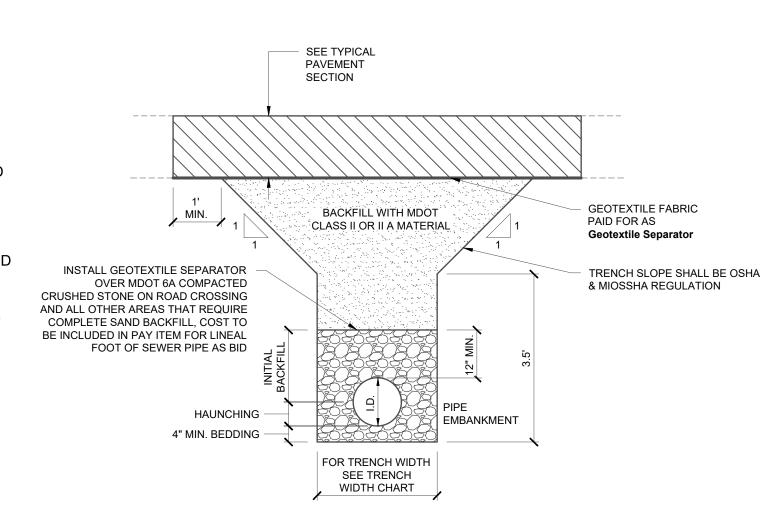
PER CITY ENGINEER

CONCRETE CURB AND GUTTER

Curb and Gutter, Conc, Det F4, Modified

PAID FOR AS:

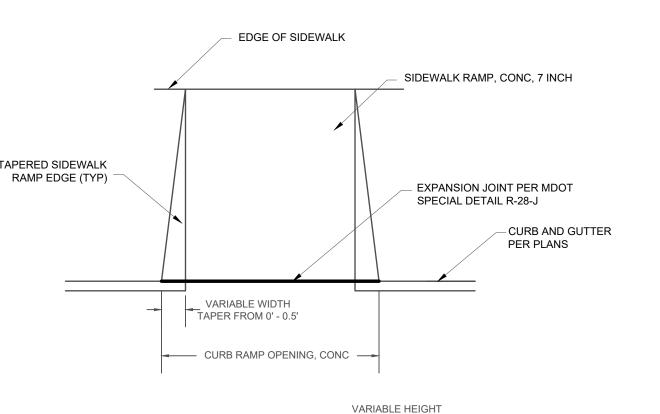
TYPICAL MAIL BOX CROSS SECTION DETAIL



#### TRENCH DETAIL B, MODIFIED DETAIL

NOT TO SCALE

TRENCH WIDTH CHART								
PIPE SIZE	MINIMUM	MAXIMUM						
6", 8" & 10"	24"	30"						
12" & 15"	30"	36"						
18"	34"	40"						
21"	38"	42"						
24"	42"	46"						
27"	45"	49"						
30"	49"	53"						
36"	56"	60"						
LARGER THAN 36"	I.D. +20"	I.D. +24						



# SIDEWALK RAMP SECTION AT CURB

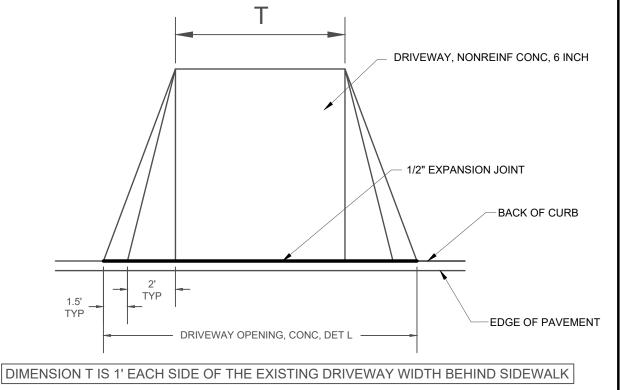
TAPER FROM 0" - 6"

TAPERED SIDEWALK

RAMP EDGE (TYP)

#### SIDEWALK RAMP DETAIL NOT TO SCALE

-- 0.5' MIN



#### DRIVEWAY APPROACH DETAIL

NOT TO SCALE

#### MISCELLANEOUS ESTIMATES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS

1	LSUM	Mobilization, Max 5% (Road and Storm)
1	LSUM	Mobilization, Max 5% (Water Main)
1	LSUM	Testing and Chlorination of Water Main
5	Ea	Sanitary Serv Conflict
10	Ea	Abandoned Gas Main Conflict
5	Ea	Sewer Bulkhead, 12 inch
10	Cyd	Subbase, CIP
100	Syd	Pavt, Rem
100	Syd	Sidewalk, Rem
100	Syd	Driveway, Nonreinf Conc, 6 inch
600	Sft	Sidewalk, Conc, 4 inch
400	Sft	Sidewalk, Conc, 6 inch
2	Ton	Cement
200	Ft	Saw Cutting
500	Ft	Curb and Gutter, Rem
500	Ft	Curb and Gutter, Conc, Det F4, Modified
10	Ton	Hand Patching

#### MAINTAINING TRAFFIC QUANTITIES

HMA Approach

Approach, CL II, LM

Sign, Type III, Rem

Post, Steel, 3 pound

Audio Visual Filming

Sign, Type III, Erect, Salv

Turf Establishment, Performance

11	Ea	Barricade, Type III, High Intensity, Double Sided, Furn & Oper
30	Ea	Pedestrian, Type II Barricade, Temp
2	Ea	Lighted Arrow, Type C, Furn & Oper
95	Ea	Plastic Drum, High Intensity, Furn & Oper
291	Sft	Sign, Type B, Temp, Prismatic, Furn & Oper

Minor Traffic Devices, Max \$10,000

	EX	STING	FEATURES LE	GEND	)
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TREE (DECIDUOUS)	C	CABLE BOX	<b>(A)</b>	SURVEY CONTROL POINT
	BUSH	T	TELEPHONE RISER	BM#1	BENCHMARK
£	TREE (CONIFEROUS)		TELEPHONE MANHOLE	<del>-</del>	SECTION CORNER
	DEAD TREE	THH	TELEPHONE HANDHOLE		BOUNDARY LINE
<b>@</b>	STUMP	E	ELECTRICAL RISER		PROPERTY LINE
$\circ$	MANHOLE	E	ELECTRICAL MANHOLE		SANITARY SEWER
0	SANITARY CLEANOUT	EHH	ELECTRICAL HANDHOLE		STORM SEWER
<b>#</b>	RD. CATCH BASIN	-•	POWER POLE		CULVERT (21" AND UNDER)
$\blacksquare$	SQ. CATCH BASIN	×	LIGHT POLE	==	CULVERT (24" AND UP)
<b>-</b>	FIRE HYDRANT	0	GUY POLE		CABLE T.V.
$\bowtie$	WATER VALVE	)	GUY ANCHOR		TELEPHONE
$\otimes$	CURB STOP & BOX	8-	PED CROSSING SIGNAL	—— Е	GAS
<b>(W)</b>	WELL	×	YARD LIGHT		OVERHEAD LINES OH
<b>W</b>	WATER MANHOLE	ф	SIGN	<b>— o—</b>	GUARDRAIL
(M)	WATER METER	·	MAILBOX		xxxx
<b>(a)</b> B#	SOIL BORING	<b>O</b>	GUARD POST	W	WOODLINE
	MONITORING WELL	•	FOUND CONC. MONUMENT		
		•	FOUND IRON ROD		
		0	SET IRON ROD		L ITEMS LISTED ON THE LEGEND MAY RESENT ON DRAWING.

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#### WATER MAIN CONSTRUCTION NOTES

- 1. ALL WATER MAIN MAIN LINE PROPOSED FOR THIS PROJECT HAS BEEN DESIGNED FOR AND SHALL BECOME A PUBLIC
- 2. A WATER MAIN CONSTRUCTION PERMIT FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY MUST BE ISSUED PRIOR TO BEGINNING THE CONSTRUCTION OF ANY WATER MAIN IN THIS PROJECT.
- 3. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF OWOSSO SPECIAL PROVISION FOR WATER MAIN INSTALLATION AND THE STANDARD DETAILS.
- 4. ALL PUBLIC WATER MAIN SHALL BE OWNED AND MAINTAINED BY THE CITY OF OWOSSO UPON COMPLETION OF THE PROJECT.
- 5. ALL PUBLIC WATER MAIN SHALL BE PVC AWWA C900/C909. TRACER WIRE AND BOXES SHALL CONFORM TO THE CITY OF OWOSSO SPECIAL PROVISION FOR WATER MAIN INSTALLATION.
- 6. ALL PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES THAT ARE USED FOR POTABLE WATER MUST COMPLY WITH THE LEAD FREE REQUIREMENT AND MUST BEAR THE MARK NSF/ANSI STANDARD 61, ANNEX G OR NSF 61-G.
- 7. GATE VALVES SHALL BE EAST JORDAN RESILIENT SEATED GATE VALVES CONFORMING TO AWWA C509. VALVES SHALL BE VERTICAL, NON-RISING STEM AND OPEN CLOCKWISE. SEE CITY OF OWOSSO SPECIAL PROVISION FOR WATER MAIN INSTALLATION AND STANDARD DETAILS.
- 8. FIRE HYDRANTS SHALL CONFORM TO THE SPECIFICATION SHOWN ON THIS SHEET.
- 9. WHERE SANITARY SERVICE LEADS OR OTHER UTILITIES ARE ENCOUNTERED DURING THE CONSTRUCTION OF THE WATER MAIN, THE CONTRACTOR SHALL MAKE ADJUSTMENTS TO EITHER THE WATER MAIN OR EXISTING UTILITY TO PROVIDE CONTINUOUS SERVICE TO PROPERTIES ALONG THE ROUTE OF CONSTRUCTION. ALL WORK INCLUDING THE REBORING OF SANITARY SEWER SERVICE LEADS TO ACCOMMODATE CONSTRUCTION OR ADJUSTING WATER MAIN CONSTRUCTION TO CLEAR EXISTING SERVICES SHALL BE CONSIDERED INCLUSIVE TO CONSTRUCTION OF THE WATER MAIN.
- 10. PRESSURE TAPS TO EXISTING WATER MAINS AND CONNECTIONS TO EXISTING VALVES SHALL BE MADE ONLY UNDER CITY OF OWOSSO OBSERVATION. ALL VALVE OPENING AND CLOSING SHALL BE BY THE CITY OF OWOSSO PERSONNEL. A FULL DIAMETER STAINLESS STEEL TAPPING SLEEVE IS REQUIRED FOR ALL PRESSURE TAPS.
- 11. ALL WATER MAIN SHALL HAVE A MINIMUM COVER OVER THE TOP OF THE PIPE OF 5.5 FEET FROM FINISHED GRADE. THE STANDARD LAYING CONDITIONS FOR WATER MAIN SHALL BE A 30" TRENCH WIDTH OR PIPE DIAMETER PLUS 12". THE PIPE SHALL BE LAID ON A 4" PREPARED SAND CUSHION WITH RECESSES TO ACCOMMODATE PIPE BELLS.
- 12. ALL WATER SERVICE LEADS SHALL HAVE A MINIMUM COVER OVER THE TOP OF THE PIPE OF 5 FEET FROM FINISHED
- 13. ALL TRENCH EXCAVATION UNDER OR WITHIN 5' OF EXISTING OR PROPOSED PAVING SHALL BE BACKFILLED WITH CLASS II COMPACTED GRANULAR MATERIALS.
- 14. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAIN AND SEWERS SHALL BE 10 FEET.
- 15. CONTRACTOR SHALL RESTRAIN ALL THRUST IN THE SYSTEM BY THE USE OF MEGA-LUG RESTRAINED JOINTS. ALL HYDRANTS, TEES, VERTICAL OR HORIZONTAL BENDS AND FUTURE VALVE CONNECTIONS SHALL BE RESTRAINED. RESTRAINTS SHALL HAVE APPROVAL PRIOR TO BEING INCORPORATED INTO PROJECT CONSTRUCTION.
- 16. WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C605, AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651. WATER MAIN CHLORINATION SHALL BE OBSERVED AND MONITORED BY CITY OF OWOSSO REPRESENTATIVE.
- 17. WATER SERVICE LEADS SHALL BE TYPE "K" COPPER AND SHALL BE A MINIMUM OF ONE-INCH (1") IN DIAMETER. ALL SERVICE LEADS SHALL BE BORED UNDER ROADWAY. CORPORATIONS SHALL BE BRONZE ALLOY OR BRASS AND COMPLY WITH NSF/ANSI-372 OR NSF/ANSI-61G.
- 18. THE CONTRACTOR SHALL INSTALL TWO INCH CORPORATIONS ON THE WATERLINE FOR PRESSURE TESTING, CHLORINE ADDITION AND FOR BLOW-OFF PURPOSES. THE CORPORATIONS SHALL HAVE COPPER PIPE EXTENDING TO THE GROUND SURFACE. THE CONTRACTOR SHALL REMOVE THE CORPORATION AND COPPER LINE UPON A SATISFACTORY TEST AND INSTALL A PLUG.
- 19. THE CONTRACTOR SHALL ENCASE THE WATER MAIN IN PLASTIC OR CONCRETE PIPE WHERE VERTICAL SEPARATION BETWEEN STORM SEWER AND WATER MAIN OR SANITARY SEWER AND WATER MAIN IS LESS THAN EIGHTEEN (18) INCHES, AS PER MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS.
- 20. WHERE WATER MAIN CROSSES BENEATH SANITARY OR STORM SEWER. A SOLID LENGTH OF PIPE SHALL BE POSITIONED BENEATH THE CROSSING TO AVOID PIPE JOINTS IN THE VICINITY OF THE CROSSING.

#### **FREEBORE NOTE:**

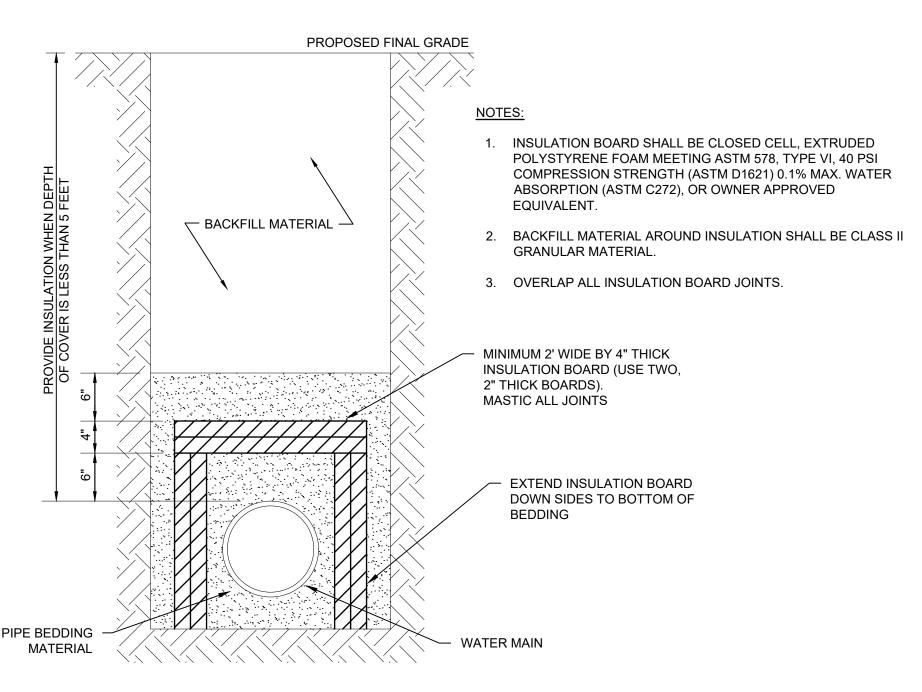
CONTRACTOR SHALL FREEBORE PROPOSED WATER MAIN WHERE NECESSARY TO SAVE/PROTECT TREES OR AVOID EXISTING UTILITIES AND POLES. COST OF FREEBORE SHALL BE INCLUDED IN THE WATER MAIN PAY ITEM. REQUIRED FREEBORE LOCATIONS SHALL BE DETERMINED IN THE FIELD AND ARE NOT SHOWN ON THE PLANS.

#### **CONSUMERS ENERGY NOTE:**

ALL UTILITY POLES SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS CONSTRUCTION OPERATIONS WITH AFFECTED UTILITIES AND ADEQUATELY SUPPORT THE POLES.

#### **WATER USAGE NOTE:**

A SERVICE CHARGE OF \$1,000 WILL BE REQUIRED AT TIME OF PERMIT APPLICATION. THIS FEE INCLUDES THE MINIMUM CHARGE OF \$50 FOR 5,000 BULK GALLONS OF WATER, PLUS ADDITIONAL CHARGES OF \$10 PER 1,000 GALLONS CONSUMED IN EXCESS OF THE MINIMUM QUANTITY. OWOSSO WATER SYSTEM PERSONNEL WILL ATTACH A WATER METER AND RPZ BACKFLOW PREVENTER TO THE HYDRANT FOR CONTRACTOR USE. IF THE WATER METER AND RPZ IS RETURNED IN GOOD OPERATING CONDITION. THE CONTRACTOR WILL RECEIVE A \$450 REFUND, LESS ADDITIONAL WATER CONSUMED IN EXCESS OF MINIMUM QUANTITY.

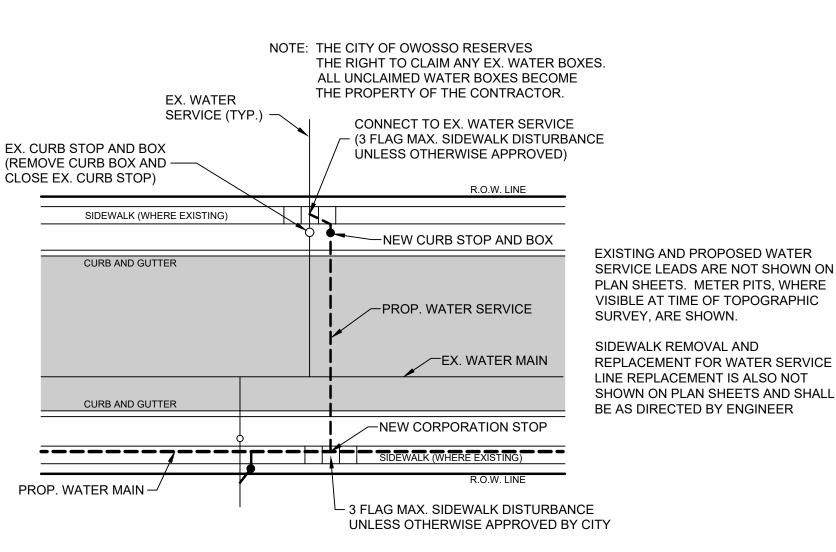


#### WATER MAIN TRENCH INSULATION DETAIL

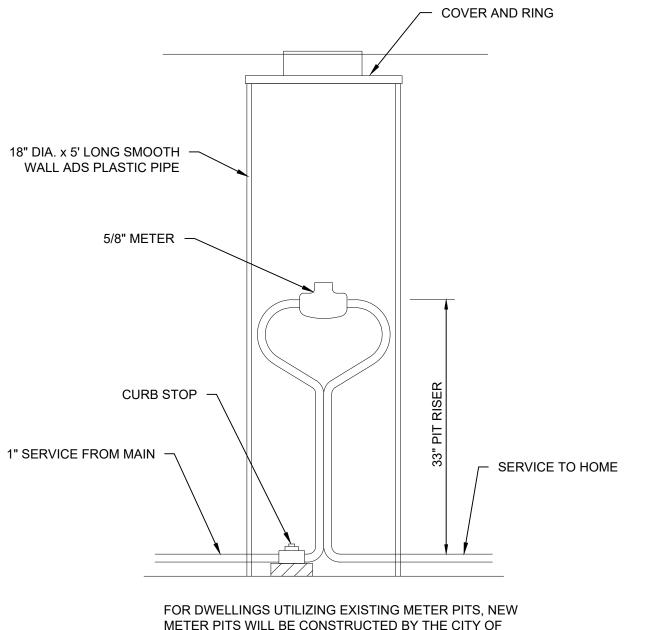
WATER SERVICES ON THE OPPOSITE SIDE OF THE ROAD OF THE NEW WATER MAIN SHALL BE BORED.

WATER SERVICES ON THE SAME SIDE OF THE ROAD AS THE NEW WATER MAIN SHALL BE OPEN CUT.

WHERE THE EXISTING CURB STOP BOX IS LOCATED IN PAVEMENT, PAVEMENT REMOVAL AND DRIVE RESTORATION WILL BE PAID SEPARATELY. CONTRACTOR SHALL MINIMIZE PAVEMENT DISTURBANCE AS DIRECTED BY THE ENGINEER.

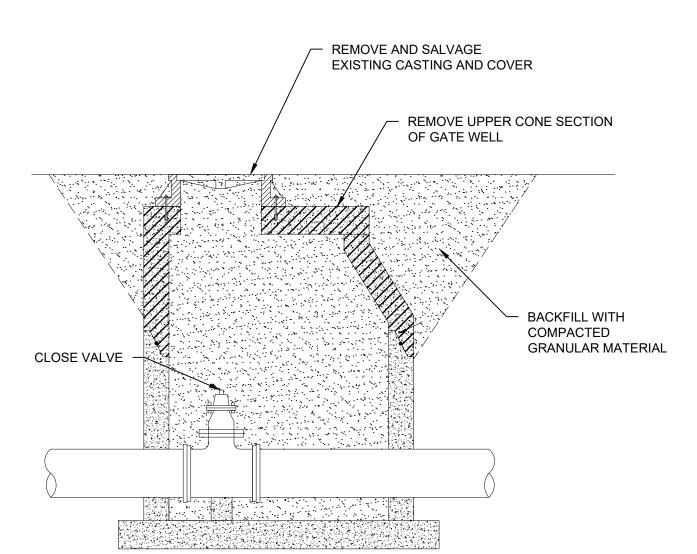


**NEW WATER SERVICE CONNECTION DETAIL** 



METER PITS WILL BE CONSTRUCTED BY THE CITY OF OWOSSO AS PART OF THIS PROJECT. CONTRACTOR SHALL CONNECT THE NEW SERVICE LEAD TO THE NEW WATER MAIN, RUN THE COPPER SERVICE LEAD TO THE DESIRED LOCATION OF THE METER PIT AS DIRECTED (TYPICALLY NEAR THE R.O.W. LINE), AND CAP.

METER PIT SCHEMATIC (FOR INFORMATION ONLY) NOT TO SCALE



**EXISTING VALVE WITH MANHOLE ABANDONMENT DETAIL** 

# WaterMaster® Fire Hydrant Specification

extension is not required. The safety coupling shall be a one piece design. Multiple parts and cast iron not allowed.

WaterMaster® Fire Hydrant Specifications for

1. Manufacturers shall provide sufficient documentation to

revisions of AWWA Standard C502. Fire hydrants shall be

assure that their hydrant will successfully meet the latest

Underwriters Laboratories Inc.(UL246) and meet the test

requirements of Factory Mutual (1510) at this pressure.

2. Hydrants shall be of a true compression type, opening against the pressure and closing with the pressure.

Composition of the main valve shall be a molded rubber

3. Fire hydrants shall be three-way in design, having

having a durometer hardness of 91 +/- 5. The rubber seat

valve shall fit a 5 1/4" opening and not be less than 1" thick.

Nat Std 2 7/8" Base,C Dome hose nozzle. Nozzles shall

pressure seals. A suitable nozzle lock shall be in place to

ductile iron retainer rings to secure nozzles shall not be

Harrington 5" Storz C & X Dome pumper nozzle, and 2 1/2"

"thread" counterclockwise into hydrant barrel utilizing "o" ring

prevent inadvertent nozzle removal. Wedging devices and/or

4. The lubrication system shall be sealed from the waterway

seals. Anti-friction washers shall be in place above and below

operating torque. The grease reservoir shall be factory filled

with an FDA approved food grade lubricant. Oil shall not be

and any external contaminants by use of "o" ring pressure

the thrust collar of the operating nut to further minimize

manufactured of ASTM B-584 bronze. It shall be 1 1/8"

**Pentagon- point to flat** in size/shape. The operating nut shall

be affixed to the bonnet by means of an ASTM B-584 bronze

hold down nut. The hold down nut shall be threaded into the

disengagement during the opening cycle of the hydrant. A

nut, for the purpose of protecting the operating mechanism

6. The direction of opening shall be **right**. An arrow shall be

cast on the top of the hydrant to indicate the opening direction.

7. The hydrant bonnet shall be attached to the upper barrel by

no more than six bolts and nuts. All nuts and bolts below

8. The hydrant will have 6' Depth of bury, unless otherwise

9. Hydrants shall be of the "Traffic Model" design, provided

with a safety coupling and flange design that will permit a full 360 degree facing of the nozzles. O-rings shall be the Quad-

Ring® type and be installed in a groove on the bottom of the

joint so that taping or gluing to the upper standpipe or

resilient weather seal shall be incorporated with the hold down

5. The operating nut shall be a one piece design,

bonnet in such a manner as to prevent accidental

from the elements.

grade shall be 304 stainless steel.

rated for 250 psi working pressure and be listed by

City of Owosso hydrants with Stortz

10. The operating stem shall be a two piece design, not less than 1 1/4 " diameter (excluding threaded or machined areas). Threads shall be Acme type with no 60 deg. V threads allowed. Travel stops shall be in the inlet/shoe and are not allowed in the bonnet area. Screws, pins, bolts or fasteners used in conjunction with the stem coupling shall be stainless

11. The inside diameter of the hydrant barrels shall not be less than 7 ¼ inches and the hydrant shall be painted **Yellow**.

12. Heavy duty drip shutoff (top plate) and valve seat shall be high strength manganese bronze. Valve seat shall be installed in a bronze seat ring. Drain shall be tapped and plugged, bronze lined and 3/8 inch diameter minimum. They shall operate without the use of springs, toggles, tubes, levers or other intricate synchronizing mechanisms. Lower valve plate shall be a one piece ductile iron casting and not require a separate cap nut. Drains shall be open and flushed during the first 4 turns of opening the hydrant before positively closing while operating the hydrant.

13. The shoe connection shall be **Mechanical Joint** or as specified. The inlet/shoe shall be fusion bonded epoxy coated per ANSI/AWWA C550 and with an NSF61 approved coating having ample blocking pads for sturdy setting. Six stainless steel bolts and nuts are required to fasten the shoe to the lower barrel. The shoe/inlet shall be directly connected to the standpipe flange. Designs using a sandwich piece in between the standpipe and shoe/inlet shall not be allowed.

14. External parts- the top bonnet, upper standpipe, lower standpipe and shoe shall be ductile iron to ensure strength throughout the exterior of the hydrant- Gray Iron hydrant body parts will not be allowed.

Municipality reserves the right to accept only those materials which are in full compliance with these specifications and deemed most advantageous to its interests.

Upon request, supplier shall furnish flow data indicating friction loss in psi at a flow of 1,000 gpm from the pumper nozzle. Such friction loss shall not exceed 2.5 psi. Also, the municipality may request the manufacturing "point of origin" for any/or all hydrant parts. All cast components shall be made in

Failure to comply with any of these above requirements is sufficient cause for rejection of proposed hydrants.

Hydrant shall be EJ WaterMaster® 5BR250.

800 626 4653

CONTRACT R 7457-01 PH 0 OGRAM NUMBER Ш

MICHIG/ IVISION SERVICE

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REMOVE AND SALVAGE VALVE BOX **BACKFILL WITH** COMPACTED **GRANULAR MATERIAL** 

Юμ 2020 DWRI

EXISTING VALVE WITH VALVE BOX ABANDONMENT DETAIL

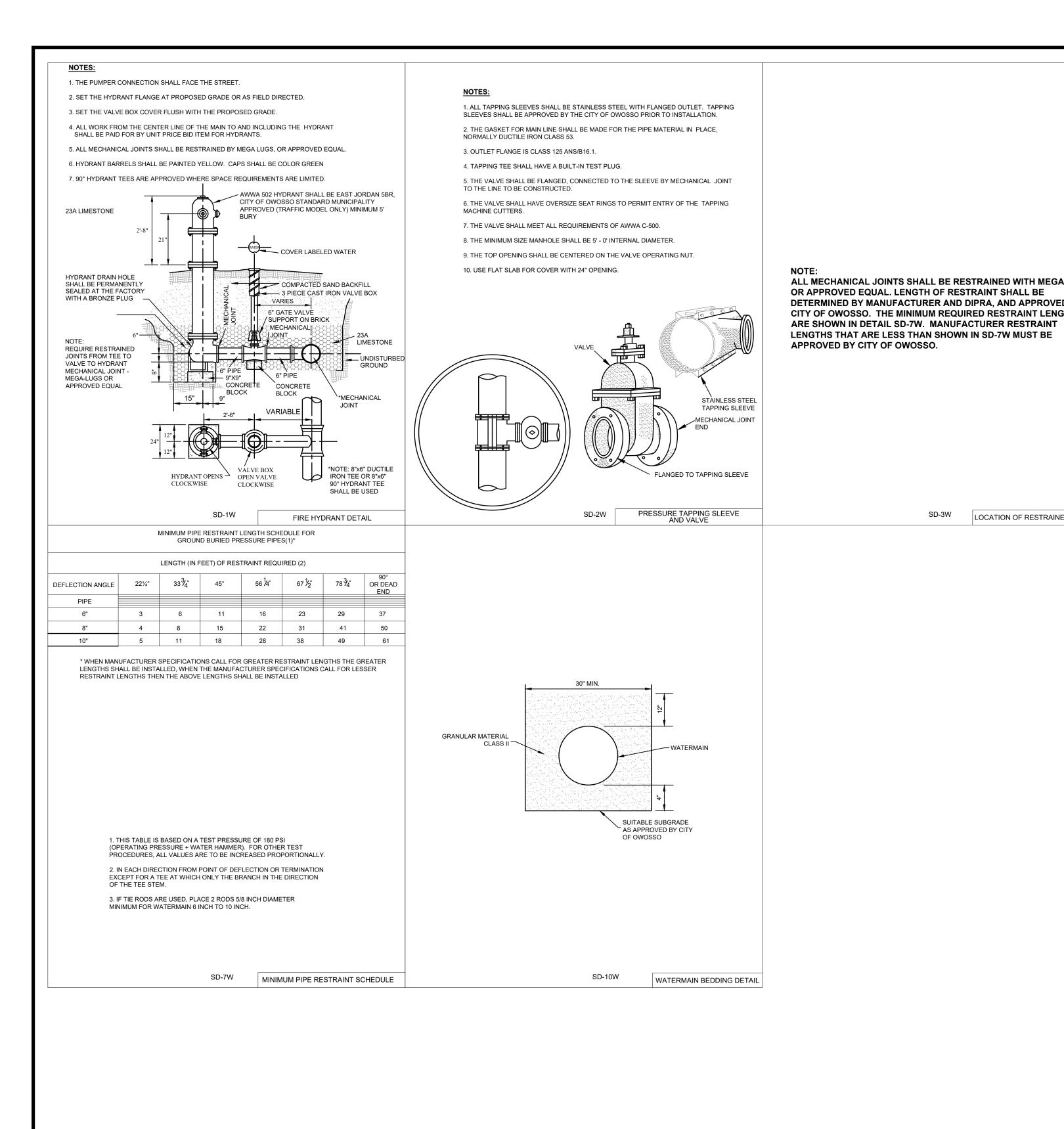
THE CITY RESERVES THE RIGHT TO CLAIM ANY

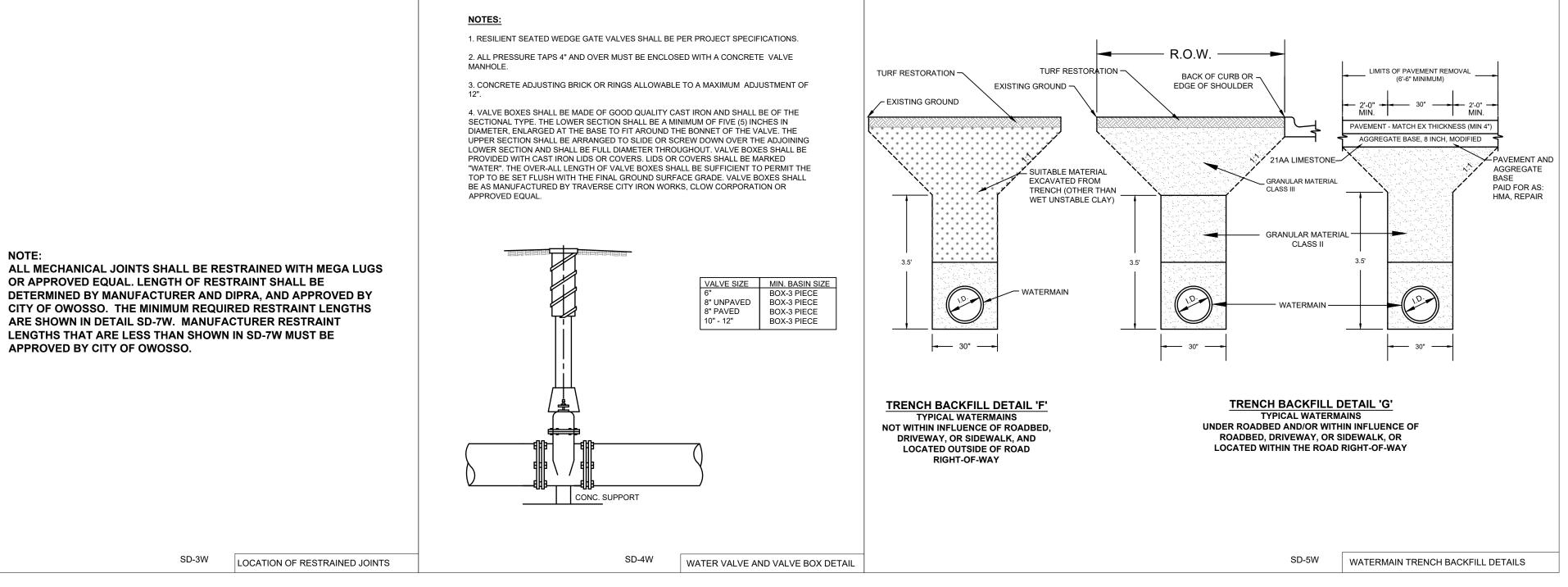
COVERS AND CASTINGS. ALL UNCLAIMED SHALL

BECOME THE PROPERTY OF THE CONTRACTOR.

EX. WATER VALVE BOXES AND GATE WELL

CLOSE VALVE





DETAIL PROGRAM CONTRACT 2 CT NUMBER 7457-01 PHASE STANDARD MAIN  $\mathcal{L}$ Ш 2020 STREET F DWRF PROJEC

CIT

#### MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET S-E-S-C KEYING SYSTEM

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
ERO:	SION CONTROLS		
E1	SELECTIVE GRADING AND SHAPING		To reduce steep slopes and erosive velocities.
E2	GRUBBING OMITTED		For use on steep slopes to prevent rilling, gullying, and reduce sheet flow velocity or where clear vision corridors are necessary.
E3	SLOPE ROUGHENING AND SCARIFICATION		Where created grades cause increased erosive velocites. Promotes infiltration and reduces runoff velocity.
E4	TERRACES		On relatively long slopes up to 8% grades with fairly stable soils.
E5	DUST CONTROL		For use on construction sites, unpaved roads, etc. to reduce dust and sedimentation from wind and construction activities.
E6	MULCH		For use in areas subject to erosive surface flows or severe wind or on newly seeded areas.
E7	TEMPORARY SEEDING	ALL THE STATE OF T	Stabilization method utilized on construction sites where earth change has been initiated but not completed within a 2 week period.
E8	PERMANENT SEEDING	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Stabilization method utilized on sites where earth change has been completed (final grading attained).
E9	MULCH BLANKETS		On exposed slopes, newly seeded areas, new ditch bottoms, or areas subject to erosion.
E10	SODDING		On areas and slopes where immediate stabilization is required.
E11	VEGETATED CHANNELS	- ive and see	For use in created stormwater channels. Vegetation is used to slow water velocity and reduce erosion within the channel.
E12	RIPRAP		Use along shorelines, waterways, or where concentrated flows occur. Slows velocity, reduces sediment load, and reduces erosion.
E13	GABION WALLS		On newly created or denuded stream banks to reduce velocity until permanent stabilization is achieved or on existing banks to retard erosive velocities.
E14	ENERGY DISSIPATOR	TITLE TO THE STATE OF THE STATE	Where the energy transmitted from a concentrated flow of surface runoff is sufficient to erode receiving area or watercourse.
E15	TEMPORARY SLOPE DRAIN		Where surface runoff temporarily accumulates or sheet flows over the top of a slope and must be conveyed down a slope in order to prevent erosion.
E16	SLOPE DRAIN		Where concentrated flow of surface runoff must be permanently conveyed down a slope in order to prevent erosion.

B = BIOENGINEERING

# MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET S-E-S-C KEYING SYSTEM

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
E17	CELLULAR CONFINEMENT SYSTEMS		Used on steep slopes and high velocity channels.
E18	PLASTIC SHEETS		Used on exposed slopes, seeded areas, new ditch bottoms, and areas subject to surface runoff and erosion. Used as a liner in temporary channels and to stabilize stockpiles.
E19	TEMPORARY DRAINAGEWAY/ STREAM CROSSING		Use on construction sites where stream/drainageway crossings are required.
E20	TEMPORARY BYPASS CHANNEL		Use within existing stream corridors when existing flow cannot be interrupted, and at culvert and bridge repair sites
E21	LIVE STAKING	В	In areas requiring protection of slopes against surface erosion and shallow mass wasting.
	EROSION / SEDIME CONTROLS	NT	
ES31	CHECK DAM		Used to reduce surface flow velocities within constructed and existing flow corridors.
ES32	STONE FILTER BERM		Use primarily in areas where sheet or rill flow occurs and to accommodate dewatering flow.
ES33	FILTER ROLLS	B	In areas requiring immediate protection of slopes against surface erosion and gully formation and for perimeter sediment control.
ES34	SAND FENCE		For use in areas susceptible to wind erosion, especially where the ground has not yet been stabilized by other means.
ES35	DEWATERING		Use where construction activities are limited by the presence of water and dry work is required.
ES36	DIVERSION DIKE/BERM		Within existing flow corridors to address or prevent erosion and sedimentation, or on disturbed or unstable slopes subject to erosive surface water velocities.
ES37	DIVERSION DITCH	Monte March Control of the Mar	In conjunction with a diversion dike, or where diversion of upslope runoff is necessary to prevent damage to unstabilized or disturbed construction areas.
ES38	COFFERDAM/SHEET PILINGS		Constructed along or within water corridor or waterbody to provide dry construction area.
ES39	STREAMBANK BIOSTABILIZATION	В	For use along banks where stream and riparian zones may have difficulty recovering from the long—term effects of erosion.
ES40	POLYMERS		To minimize soil erosion and reduce sedimentation in water bodies by increasing soil particle size.
ES41	WATTLES	В	In areas requiring protection of slopes against surface erosion and gully formation.

B = BIOENGINEERING

#### MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET S-E-S-C KEYING SYSTEM

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
S	EDIMENT CONTROLS		
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden shee flow from entering these areas.
S52	CATCH BASIN SEDIMENT GUARD		Use in or at stormwater inlets, especially at construction sites
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic enters or leave a construction site.
S54	TIRE WASH		For use on construction sites where vehicular traffic requires sediment removed from its tires in highly erosive areas.
S55	SEDIMENT BASIN		At the outlet of disturbed areas and at the location of a permanent detention basin.
S56	SEDIMENT TRAP		In small drainage areas, along construction site perimeters, and above check dams or drain inlets.
S57	VEGETATED BUFFER/FILTER STRIP		Use along shorelines, waterways, or other sensitive areas. Slows velocity, reduces sediment load, and reduces erosion in areas of sheet flow.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.
S59	INLET PROTECTION FABRIC FENCE		Use at stormwater inlets, especially at construction sites.
S60	INLET PROTECTION STONE		Use around urban stormwater inlets.
S61	TURBIDITY CURTAIN		Use during construction adjacent to a water esource, to contain sediment within the work area when other BMP's cannot be used.

B = BIOENGINEERING

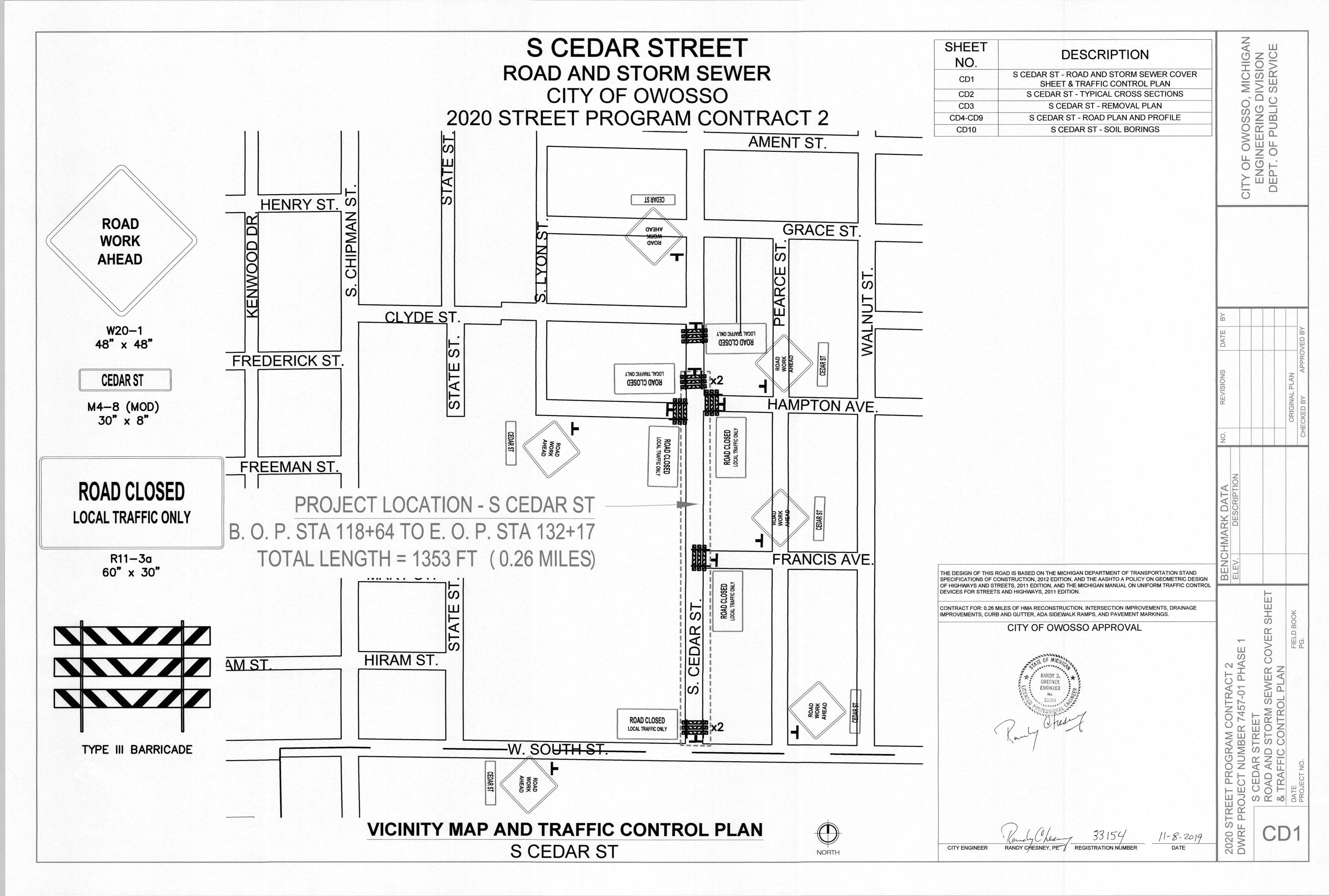
#### CONSTRUCTION SEQUENCE

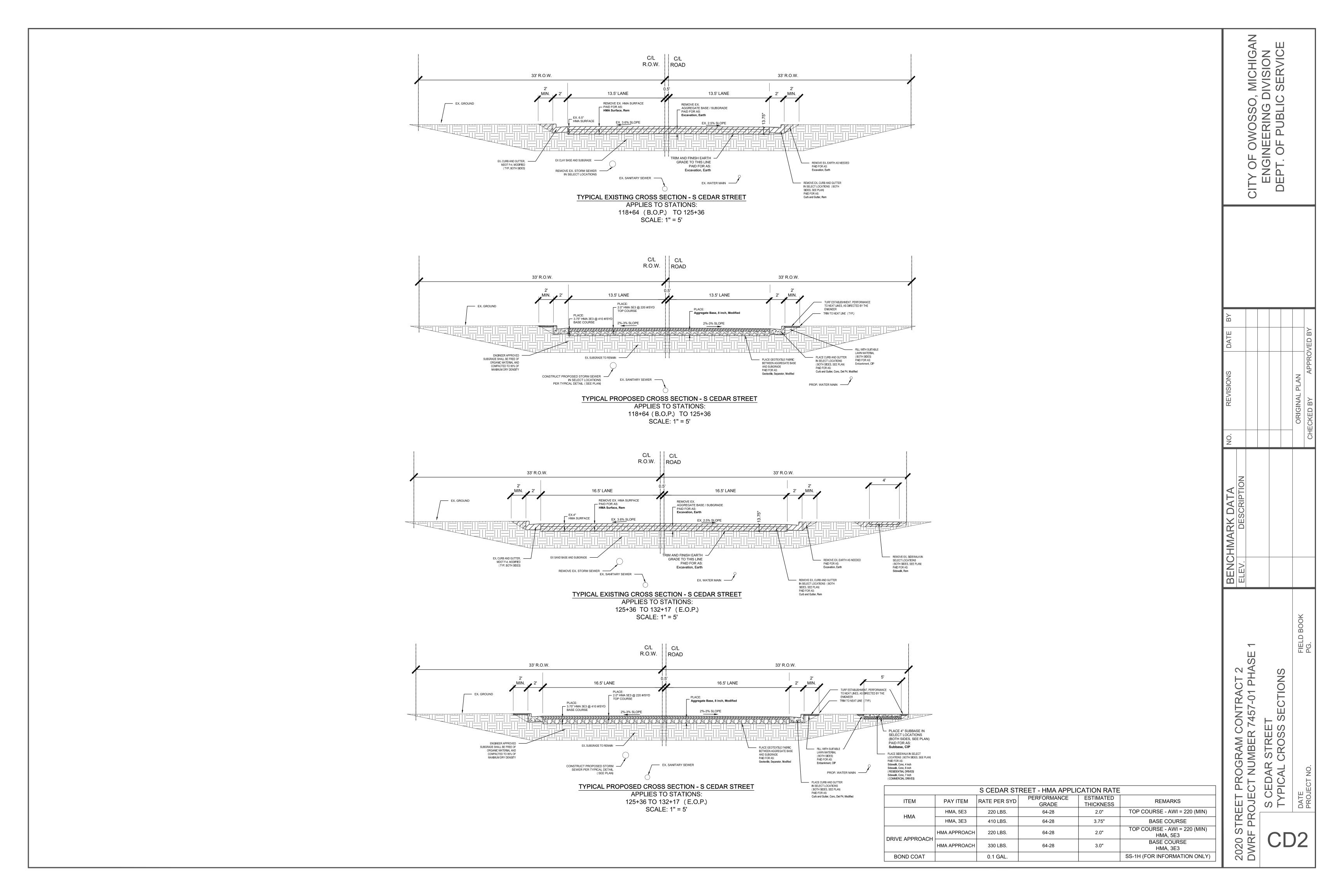
- INSTALLATION OF TEMPORARY EROSION CONTROL MEASURES.
   TRENCH EXCAVATION, STORM SEWER INSTALLATION, AND BACKFILL.
   PERMANENT MEASURES, FINAL GRADING, SEEDING AND MULCHING.

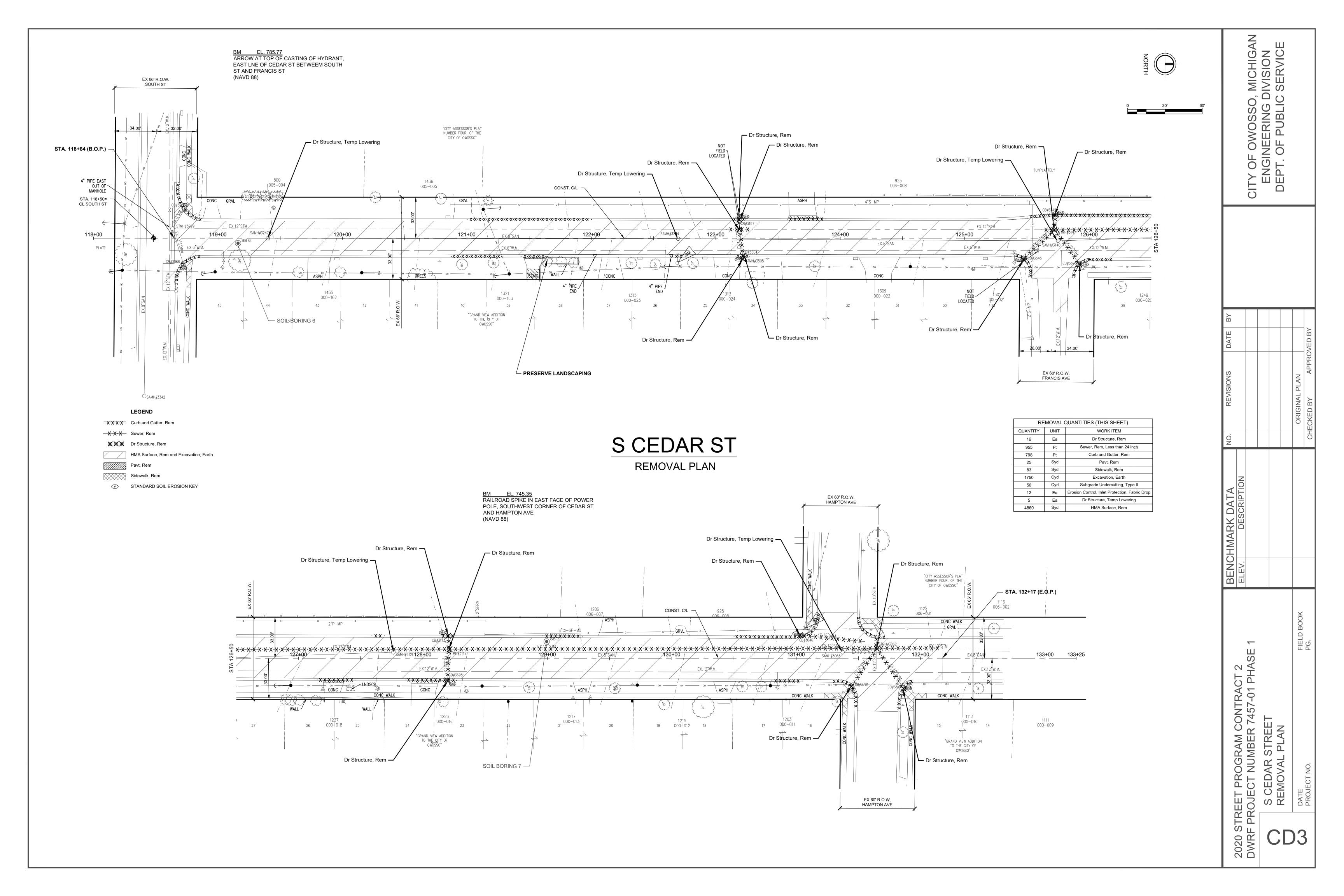
SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE												
CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC
STRIP AND STOCKPILE TOPSOIL												
ROUGH GRADE/ SEDIMENT CONTROL												
TEMP CONTROL MEASURES												
STORM FACILITIES							N/A					
TEMP CONSTRUCTION ROADS							N/A					
FOUNDATION/ BLDG. CONSTRUCTION							N/A					
SITE CONSTRUCTION					_							
PERM CONTROL MEASURES							_					
FINISH GRADING							_					
LANDSCAPING							N/A					

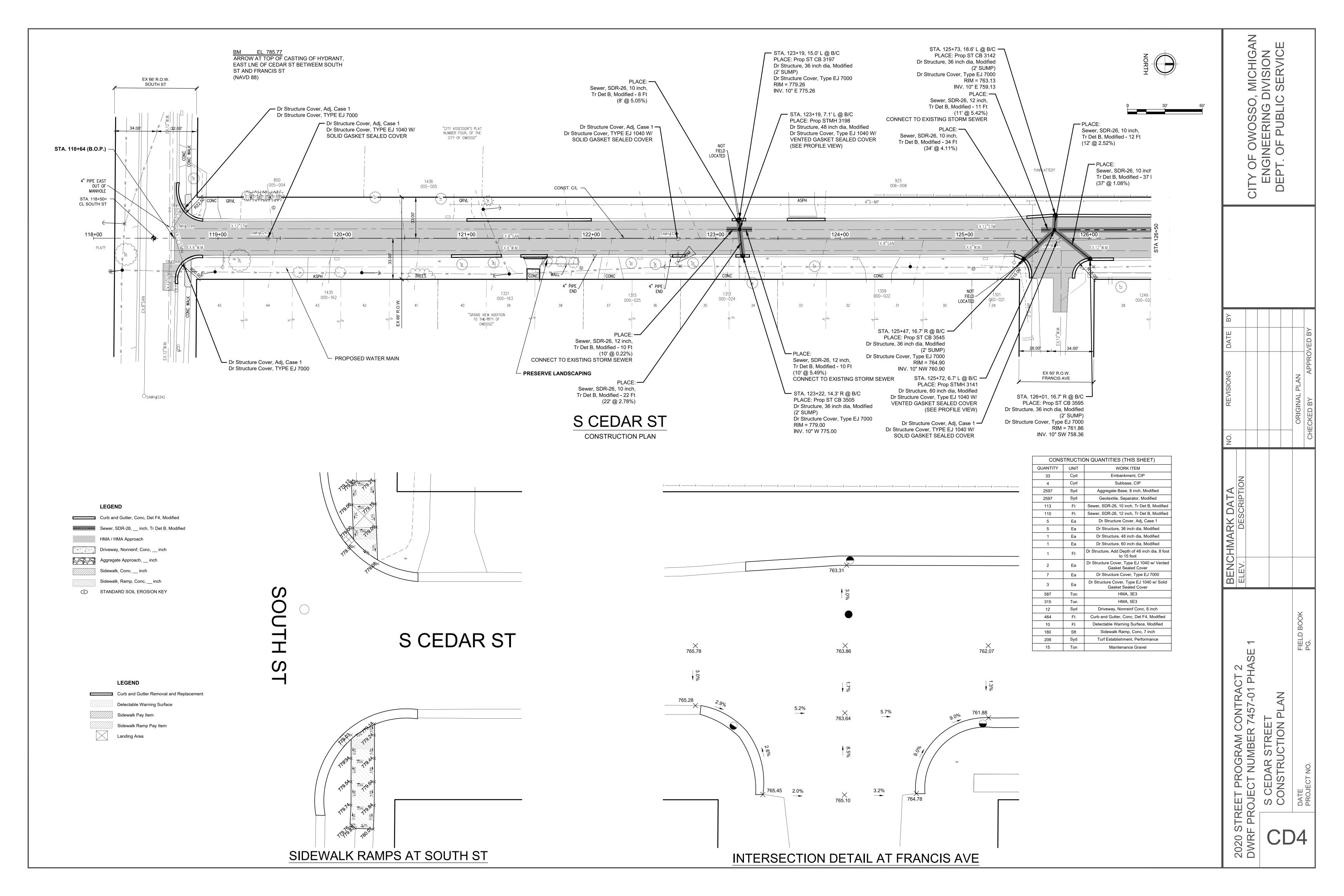
BENCHMARK DATA	ELEV. DESCRIPTION			
2020 STREET PROGRAM CONTRACT 2	DWRF PROJECT NUMBER 7457-01 PHASE 1	SESC STANDARD NOTES AND DETAILS		
2020 STR	DWRF PR		D	1

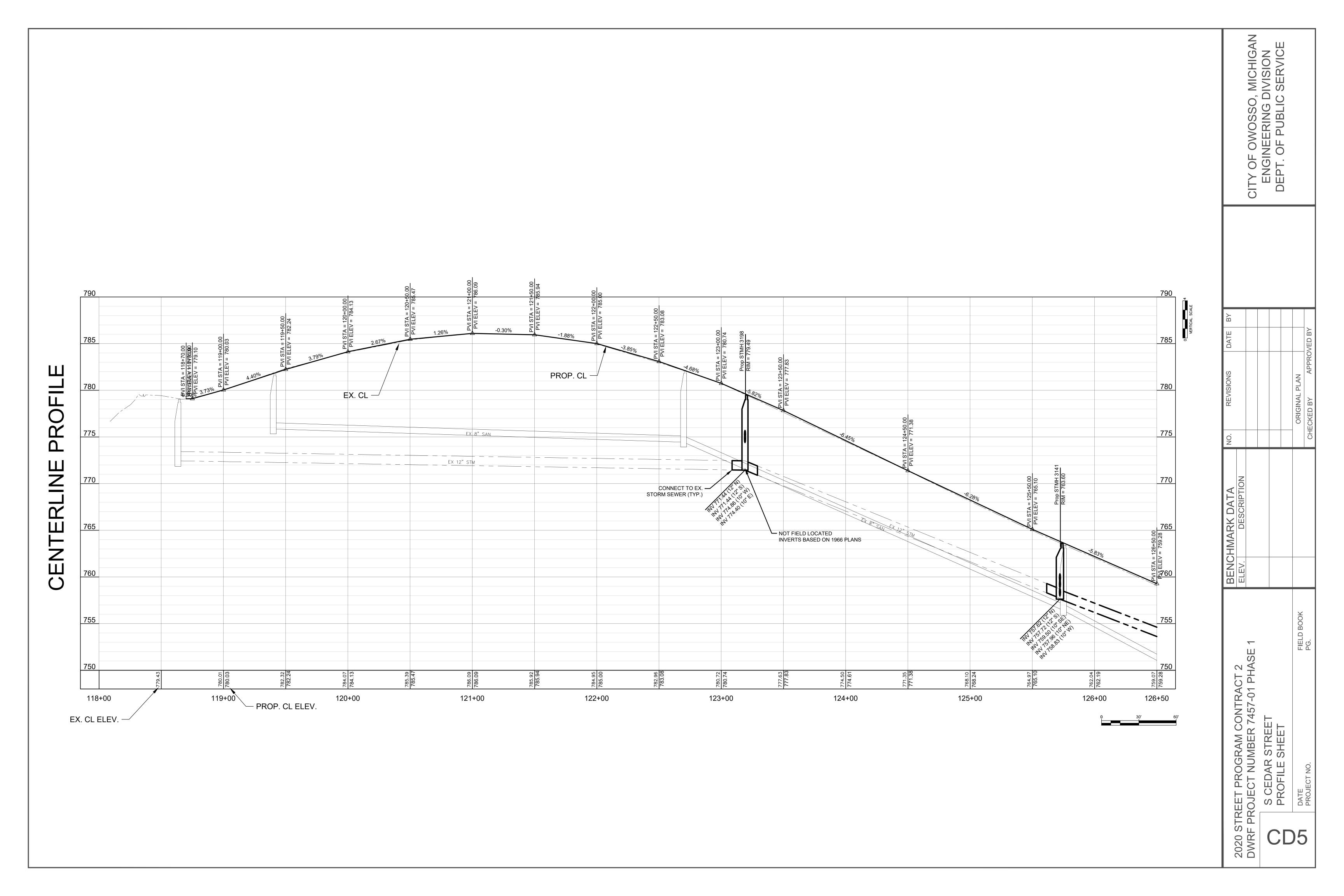
CITY OF OWOSSO, MICHIGAN ENGINEERING DIVISION DEPT. OF PUBLIC SERVICE

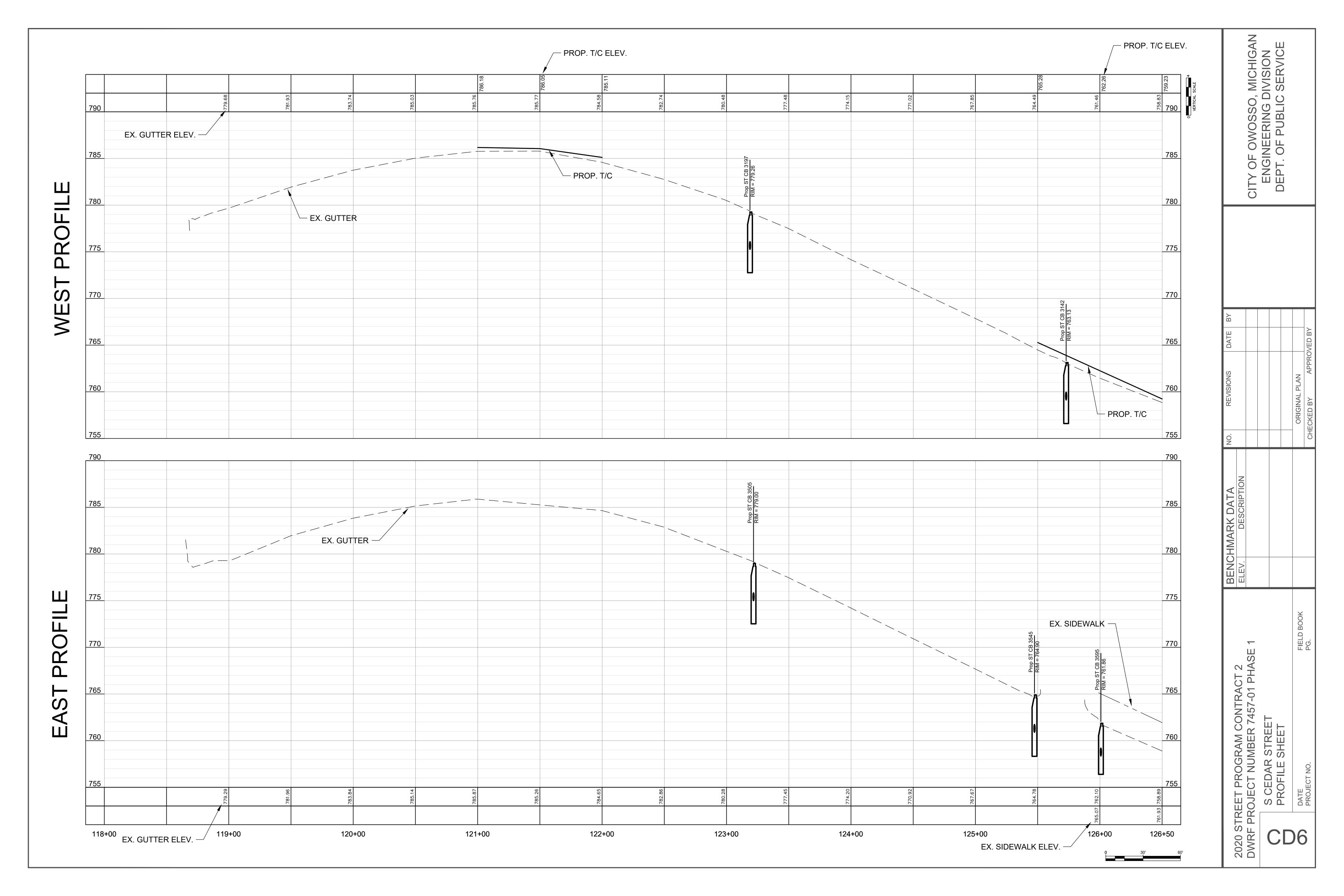


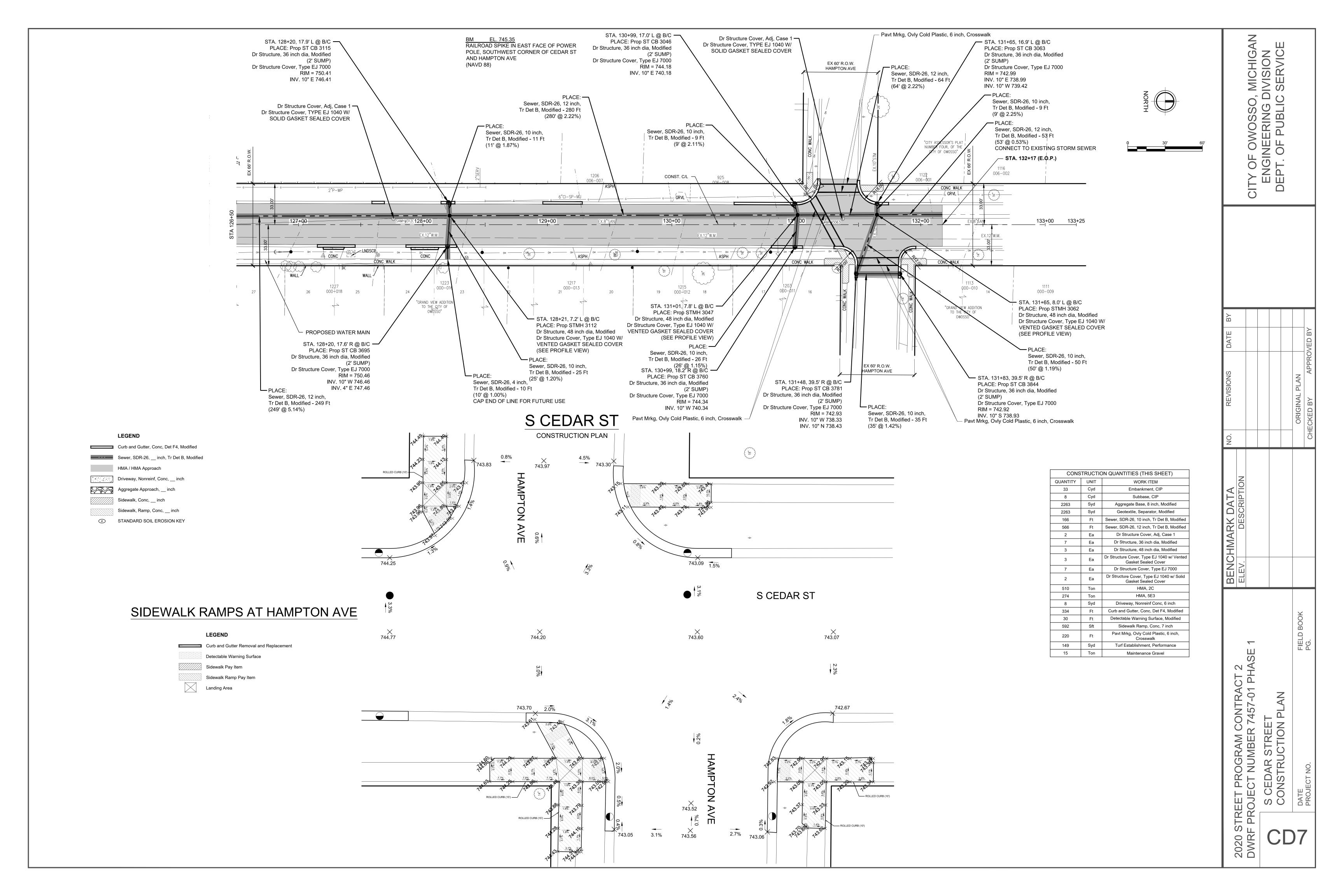


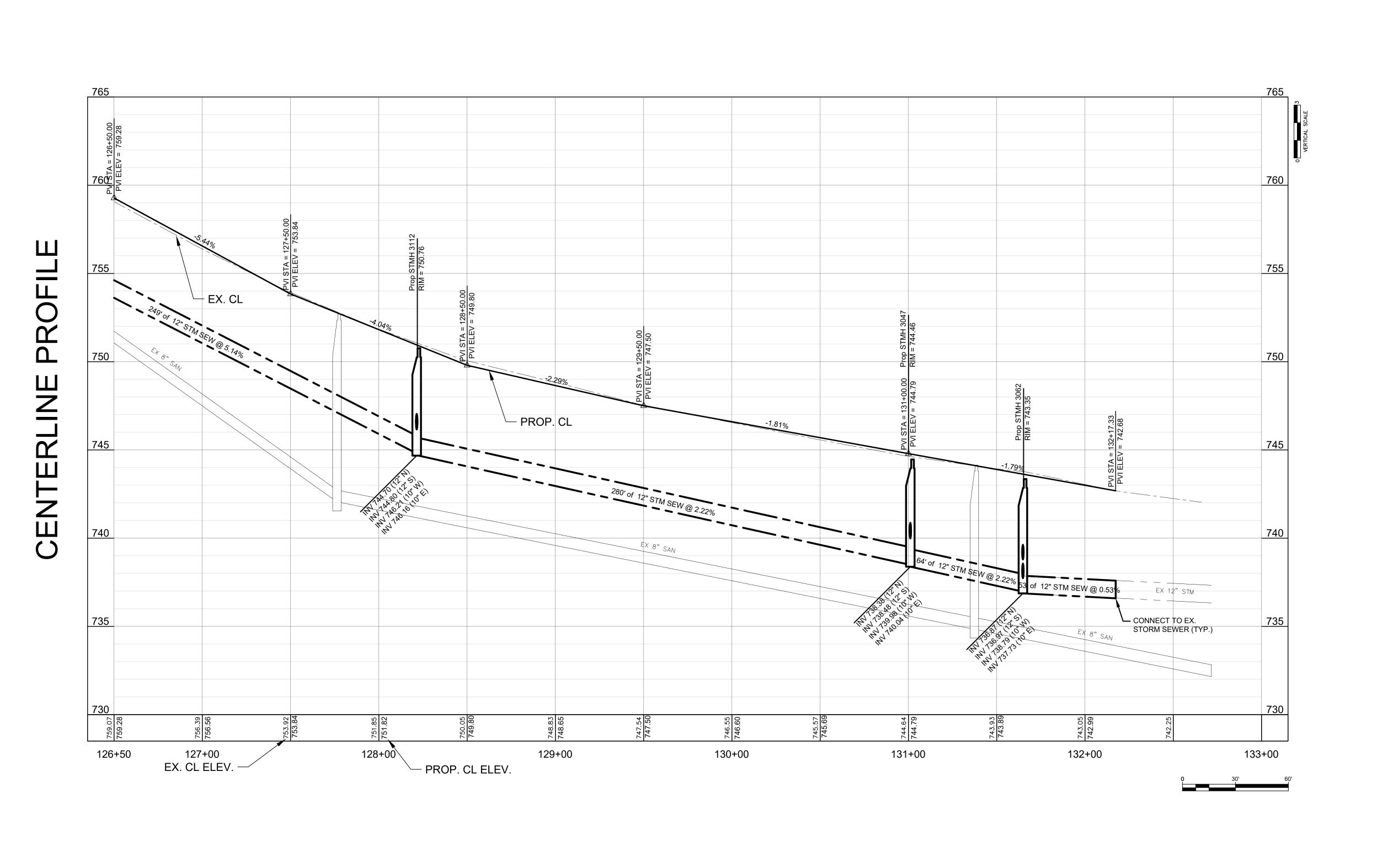












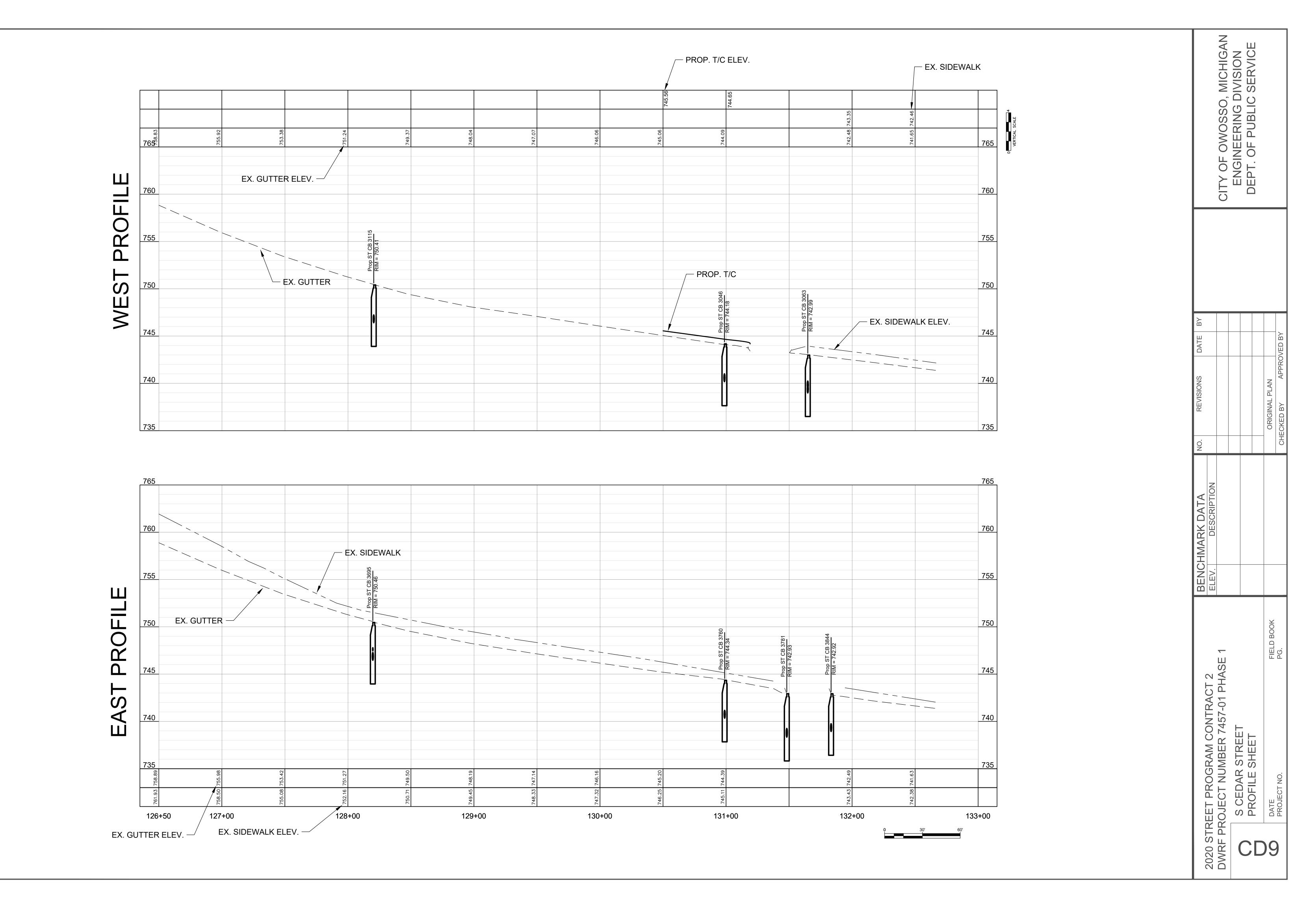
CITY OF OWOSSO, MICHIGAN ENGINEERING DIVISION DEPT. OF PUBLIC SERVICE BENCHMARK DATA
ELEV. DESCRIPTION

2020 STREET PROGRAM CONTRACT 2

DWRF PROJECT NUMBER 7457-01 PHASE

S CEDAR STREET

PROFILE SHEET





## Construction Testing Services 3300 E. Bristol Road, Burton, MI 48529

PHONE: (810) 603-0766 FAX: (810) 603-0786

JOB NO. S-18-245 LOG OF SOIL BORING NO. City of Owosso 2019 Street Program LOCATION: Owosso, Michigan

		(0) "h		DATE: 9/20/18	SURFACE	ELE/	/ATION:	Е	xisting	9
Sample & Type	Depth	Legend		Soil Description		SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			6.5"	Asphalt - Lower 1" Heavily Deteriorated		po. 0			J	
	1				-					
6A	2				}	1				
SS				Clay - Firm, Moist, Sandy, Brown w/Pebble & occ/Stor	ne <del> </del>	2				
	3					4				
			3'6"		-					
6B	4				-	1				
SS	5				-	7				
				Clay - Very Stiff, Moist, Sandy, Brown w/Pebble & occ	/Stone	8				
6C	6					5				
SS	7		7'0"		-	9				
	/		7 0	End of Boring	-	14				
	8				-					
	9				-					
	10				-					
	1				-					
	11									
	42				-					
	12				-					
	13				<u> </u>					
	14				-					
	15				-					
	10				-					
	16									
	47				-					
	17				-					
	18				<u> </u>					
	19									
-	20				}					
	20				}					
	21				<u> </u>					
	OF SA			BORING PLUGGED WITH NATURAL SOIL			ATER OF			_
	- DISTUR UNDIST.			The soil describtions shown on the logs are from visual	G.W. ENCO					INS.
	SHELBY			observations, no classification tests were performed.	G.W. ENCO					INS. INS.
	- SPLIT SF - ROCK C			Standard Penetration Test - Driving 2" OD Sampler 1' With	G.W. AFTER			F		INS.
	OTHER -			140# Hammer Falling 30"; Count Made At 6" Intervals.	G.W. VOLUI	MES	None			



### Construction Testing Services 3300 E. Bristol Road, Burton, MI 48529

PHONE: (810) 603-0766 FAX: (810) 603-0786

JOB NO. S-18-245 LOG OF SOIL BORING NO.
PROJECT: City of Owosso 2019 Street Program
Owosso, Michigan

				DATE: 9/20/18	SURFACI	E ELE	/ATION:	E	xisting	<u> </u>
Sample & Type	Depth	Legend		Soil Description		SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			4"	Asphalt					Ŭ	
	1		1'0"	Sandy Gravel - Compact, Moist, Brown						
7A	2					2				
SS				Sand - Medium Compact, Moist, Brown w/occ Pebble	&	3				
3		Oxidation		5						
			3'10"							
7D	4		0 10							
7B SS	5					7	<u> </u>			
33				Sand Compact Moist Brown w/Pobble & acc/Stone		10	<u> </u>			
7C	6			Sand - Compact, Moist, Brown w/Pebble & occ/Stone		8				
SS						10				
	7		7'0"	First of Dominar		14				
	8			End of Boring						
-	+									
	9									
	10									
	11									
	┼									
	12									
	13									
	14									
	+ '-									
	15									
	16									
	17									
	+''-									
	18									
	19									
	20									
_	-									
	21									
	OF SA			BORING PLUGGED WITH NATURAL SOIL	GRO	JND W	ATER OF	BSERV	ATIONS	3
	- DISTUR UNDIST.			* The soil descriptions shown on the logs are from visual	G.W. ENC				T.	INS.
S.T 8	SHELBY	TUBE		observations. No classification tests were performed.	G.W. ENCO				T. T.	INS.
	SPLIT SF - ROCK C				G.W. ON C				т. Т.	INS.
	OTHER -				G.W. VOL			-		

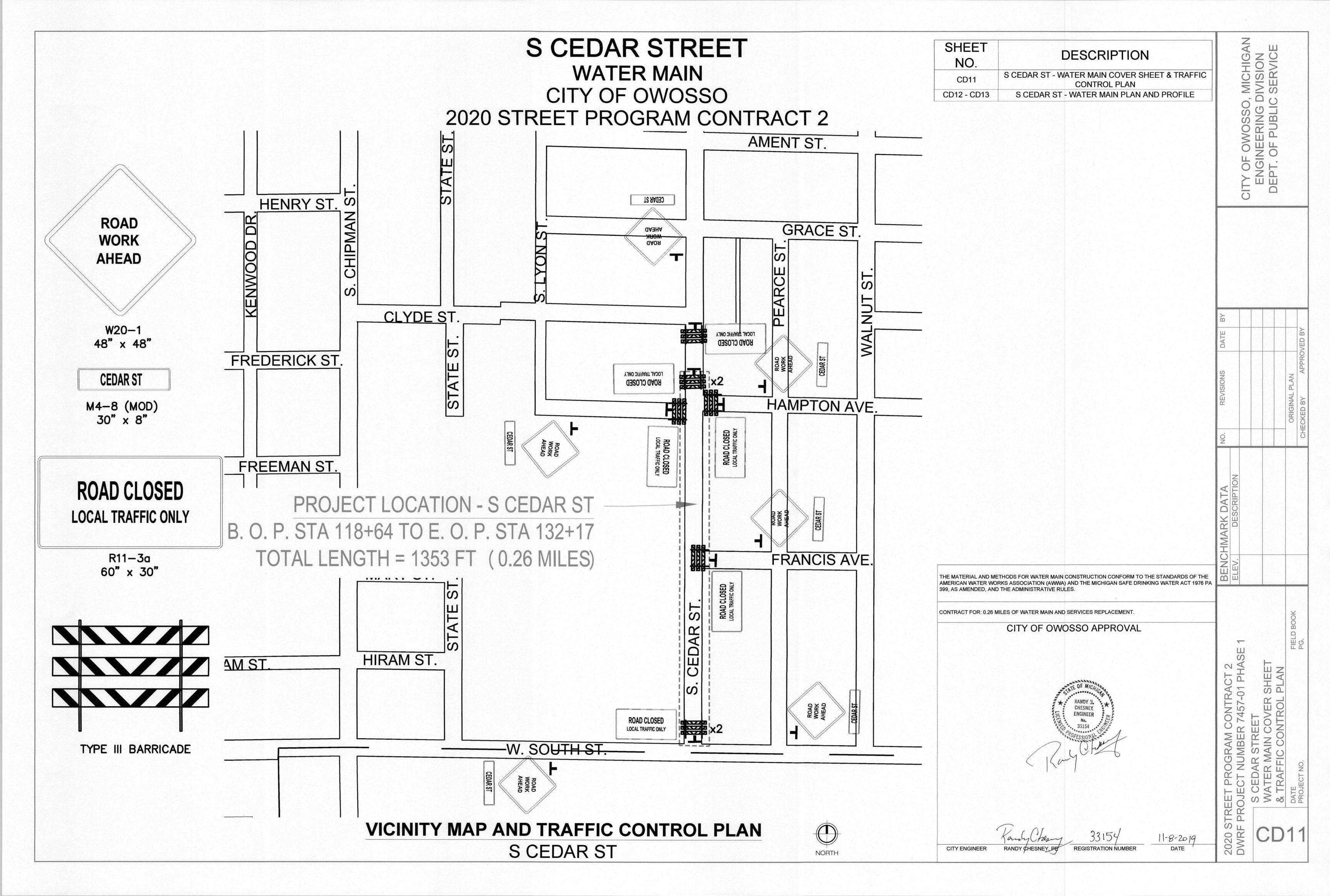
ВУ					
DATE					/ED BY
				LAN	APPROVED BY
REVISIONS				ORIGINAL PLAN	СНЕСКЕD ВУ
NO.					CHE
BENCHMARK DATA	DESCRIPTION				
BENC	ELEV.				

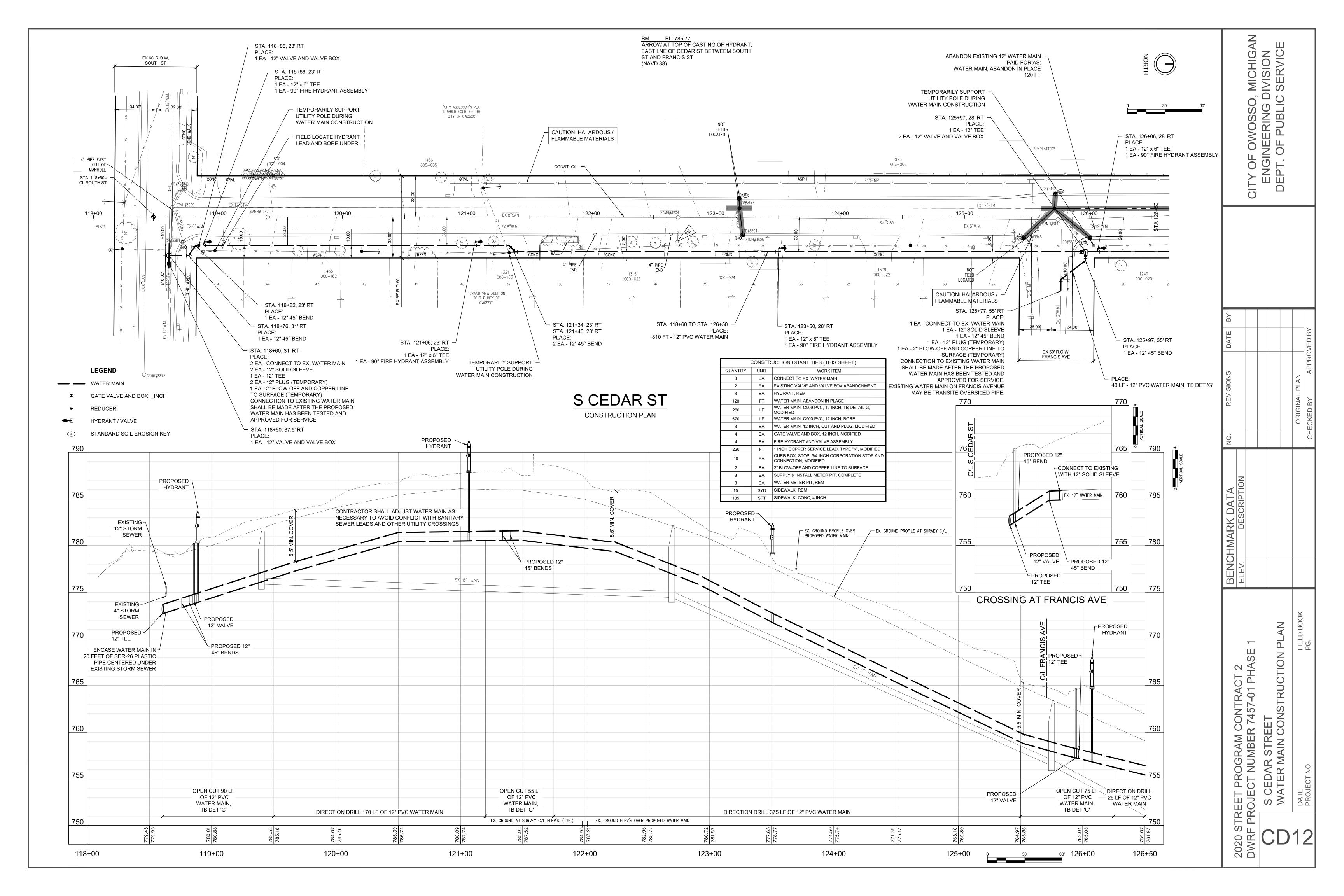
2020 STREET PROGRAM CONTRACT 2

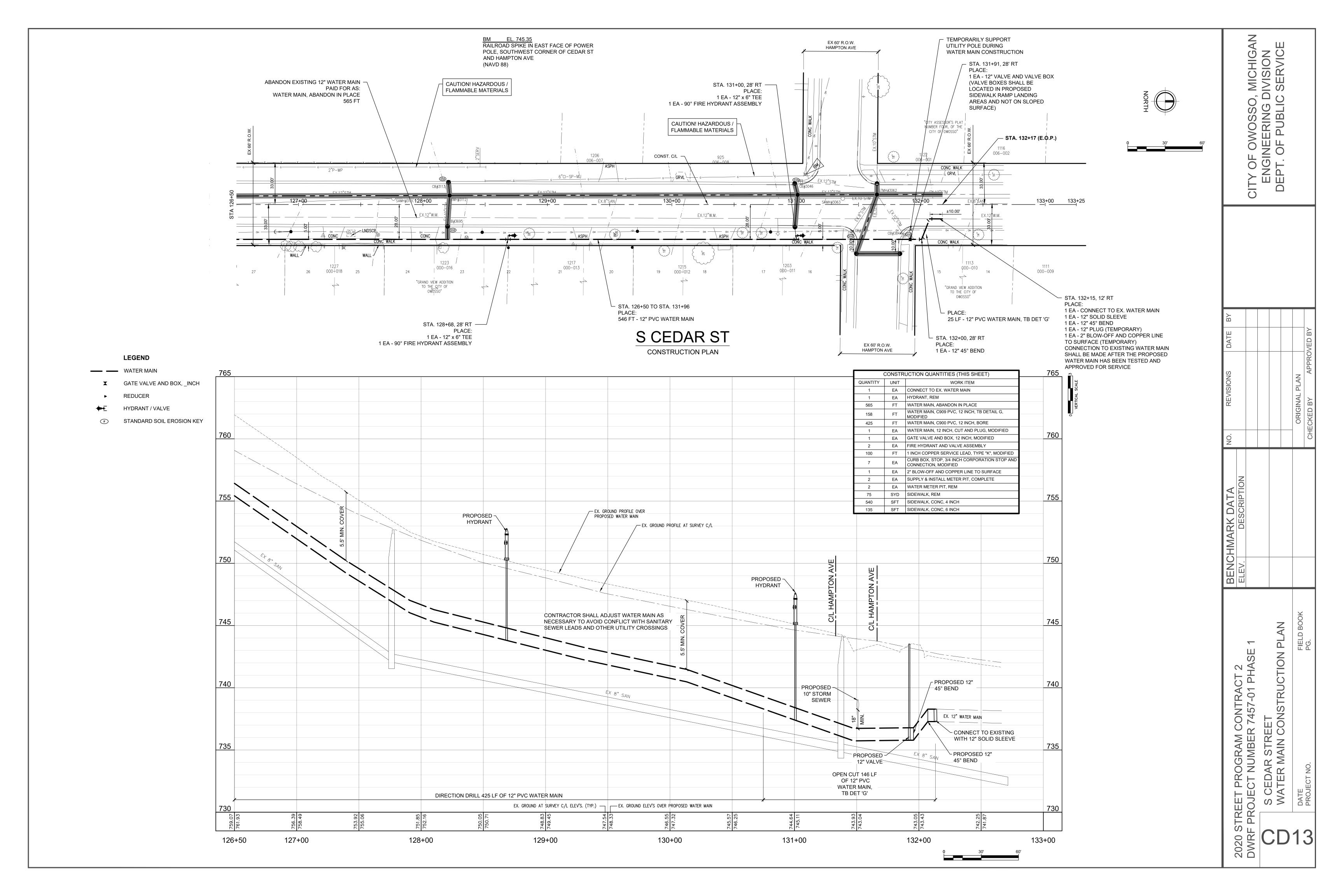
DWRF PROJECT NUMBER 7457-01 PHASE

C S CEDAR STREET

SOIL BORINGS







# CLARK AVENUE

ROAD AND STORM SEWER
CITY OF OWOSSO
2020 STREET PROGRAM CONTRACT 2

SHEET
NO.

CLARK AVE - ROAD AND STORM SEWER COVER SHEET
& TRAFFIC CONTROL PLAN

CL2 - CL3

CLARK AVE - TYPICAL CROSS SECTIONS

CL4

CLARK AVE - REMOVAL PLAN

CL5 - CL8

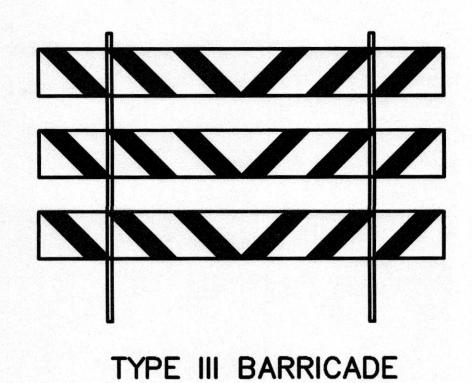
CLARK AVE - ROAD PLAN AND PROFILE

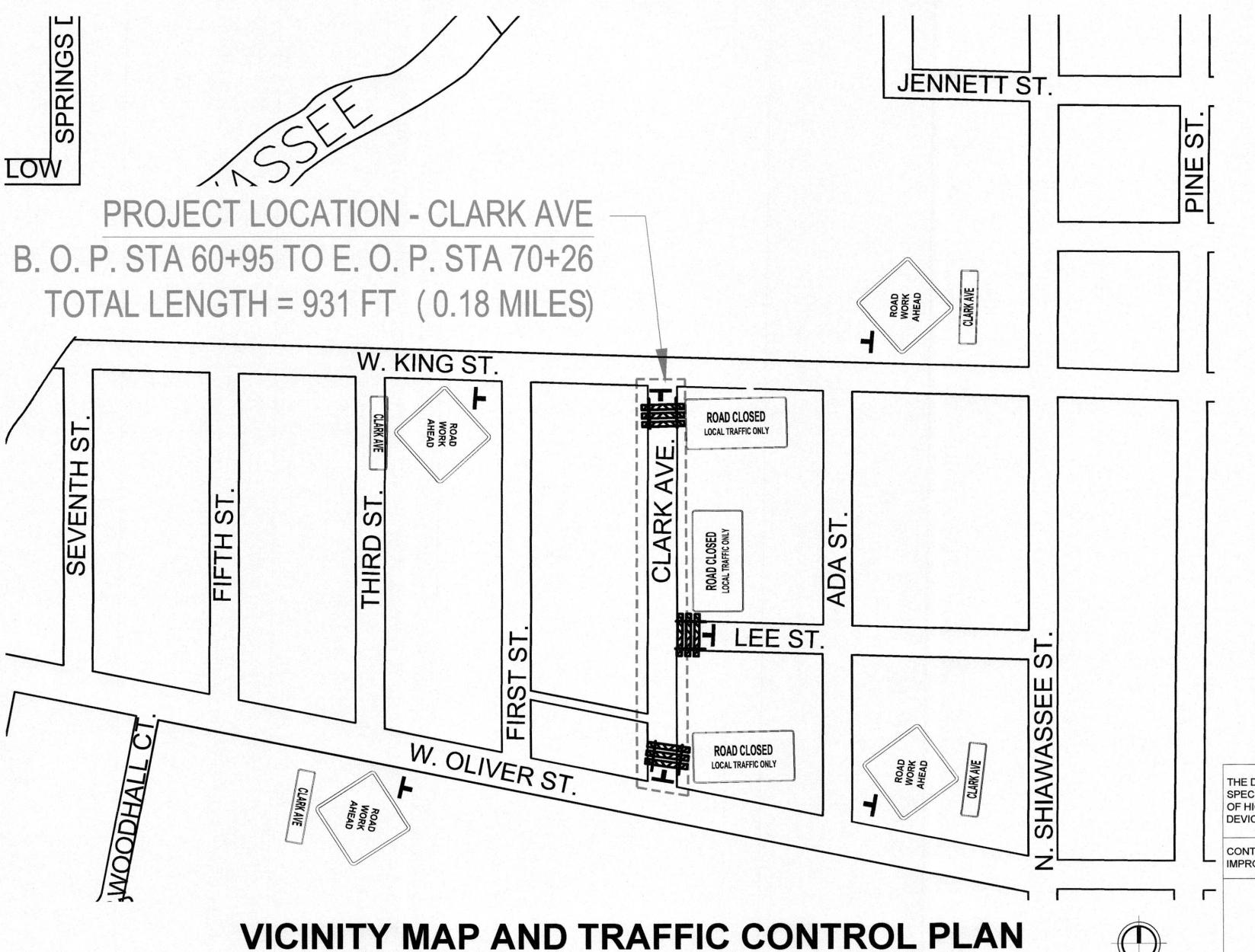
CL9

CLARK AVE - SOIL BORINGS

ROAD CLOSED LOCAL TRAFFIC ONLY

R11-3a 60" x 30"





CLARK AVE



W20-1 48" x 48"

**CLARK AVE** 

M4-8 (MOD) 30" x 8"

THE DESIGN OF THIS ROAD IS BASED ON THE MICHIGAN DEPARTMENT OF TRANSPORTATION STAND SPECIFICATIONS OF CONSTRUCTION, 2012 EDITION, AND THE AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2011 EDITION, AND THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 2011 EDITION

CONTRACT FOR: 0.18 MILES OF HMA RECONSTRUCTION, INTERSECTION IMPROVEMENTS, DRAINAGE IMPROVEMENTS, CURB AND GUTTER, AND ADA SIDEWALK RAMPS.

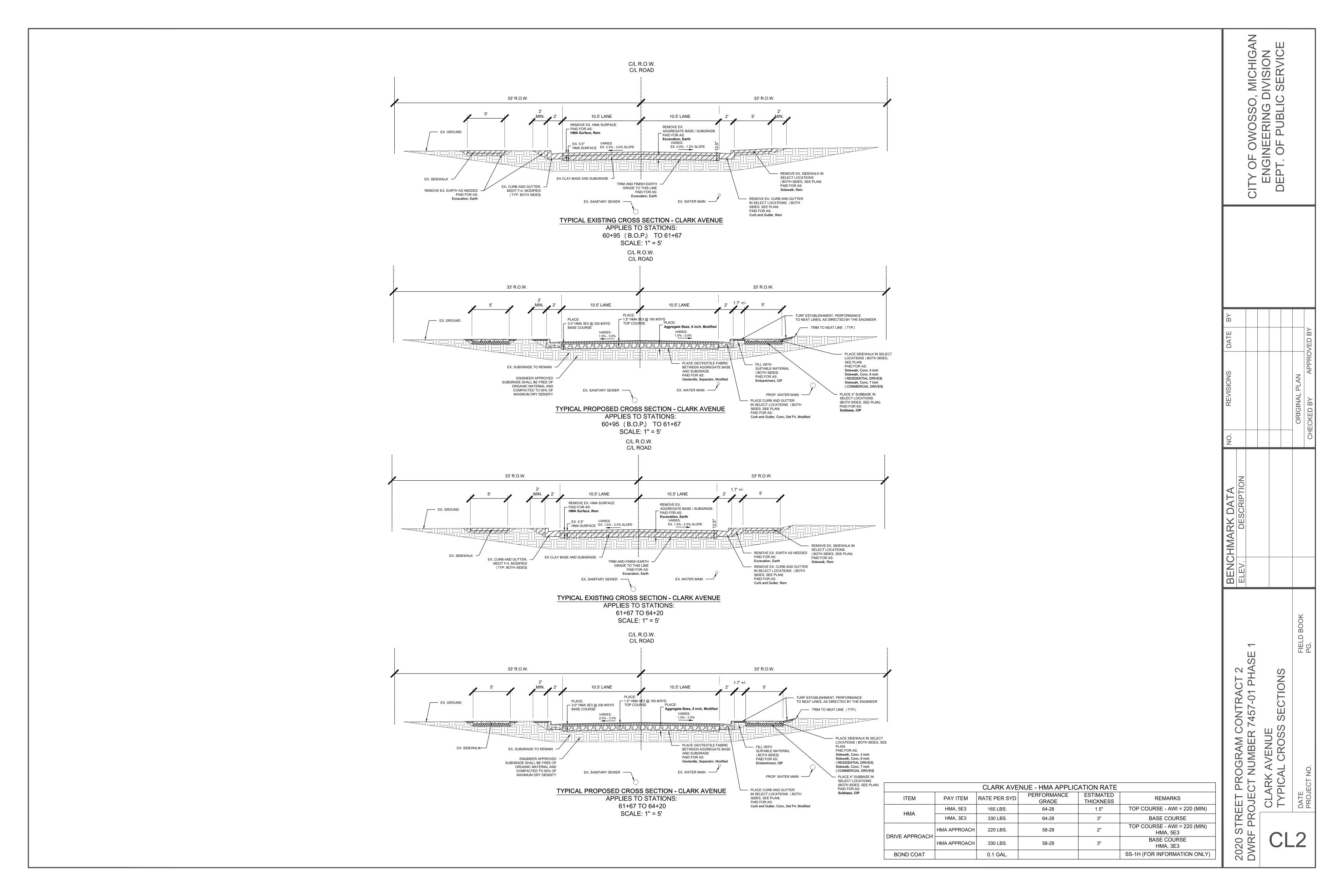
CITY OF OWOSSO APPROVAL

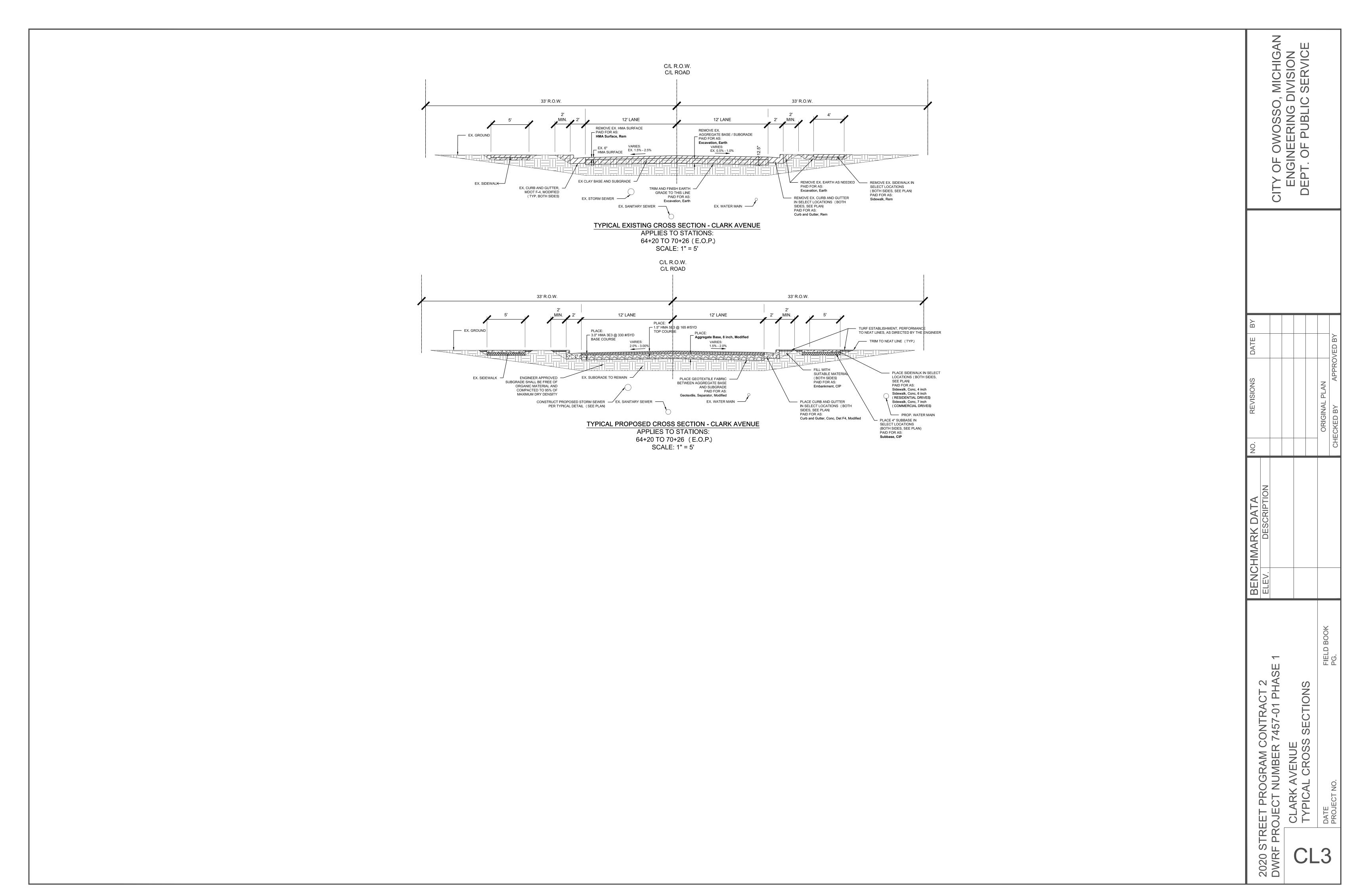


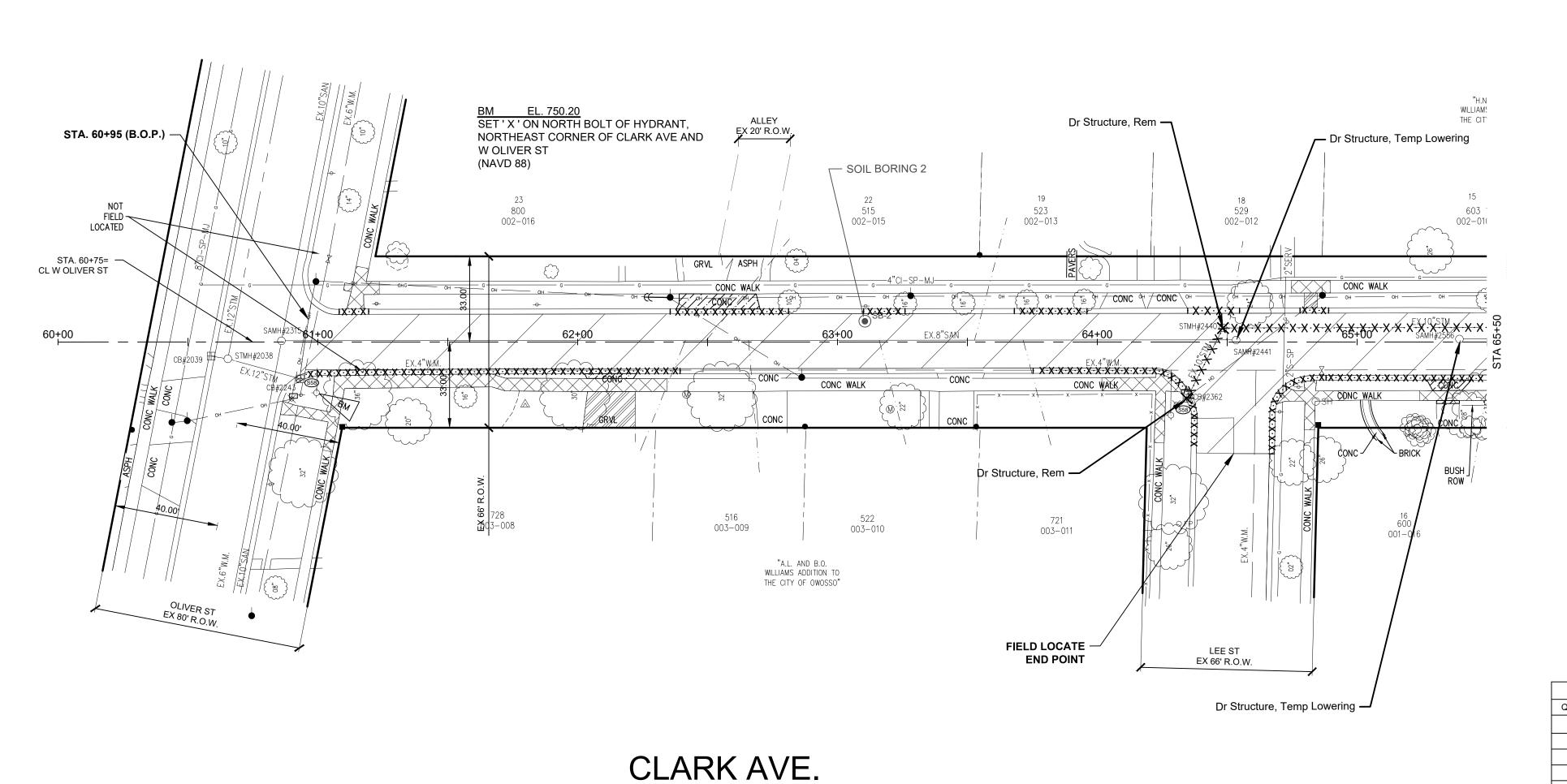
Y ENGINEER RANDY CHESNEY, PE

33154 REGISTRATION NUMBER 2020 STREET PROG DWRF PROJECT NU

DWRF PF







REMOVAL PLAN

**LEGEND** 

**□X·X·X·X** Curb and Gutter, Rem

HMA Surface, Rem

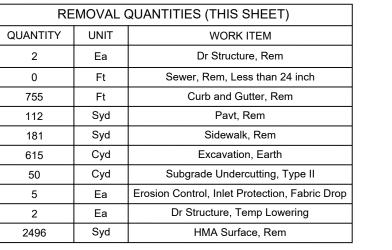
<del>· X·X·X</del> · Sewer, Rem

Pavt, Rem

Sidewalk, Rem

Excavation Earth (Cost inclusive to Machine Grading, Modified)

# STANDARD SOIL EROSION KEY



NORTH LINE OF WEST KING ST AT NORTH END OF CLARK AVE (NAVD 88) . AND S.A. 3 ADDITION TO Y OF OWOSSO" @ 36' UPSTREAM — FROM MH #2879: EXISTING SEWER 4 INCH - LOCATE @ 169' UPSTREAM — FROM MH #2879: EXISTING SEWER 4 INCH - LOCATE AND PRESERVE AND PRESERVE 609 002-007 615 002-005 625 - REMOVE AS NECESSARY 002-004 002-001 CONC 4"S-SP - STA. 70+46.75= CL W KING ST //eone/ / A\$PH ~\_\_ASPH — STA. 70+26 (E.O.P.) - SOIL BORING 3 12 620 001-014 13 610 001-015 622 001-011 626 001-010 630 001-007 636 001-006 "H.N. AND S.A. WILLIAMS ADDITION TO THE CITY OF OWOSSO"

BM EL. 747.89 ARROW AT TOP OF CASTING OF HYDRANT,

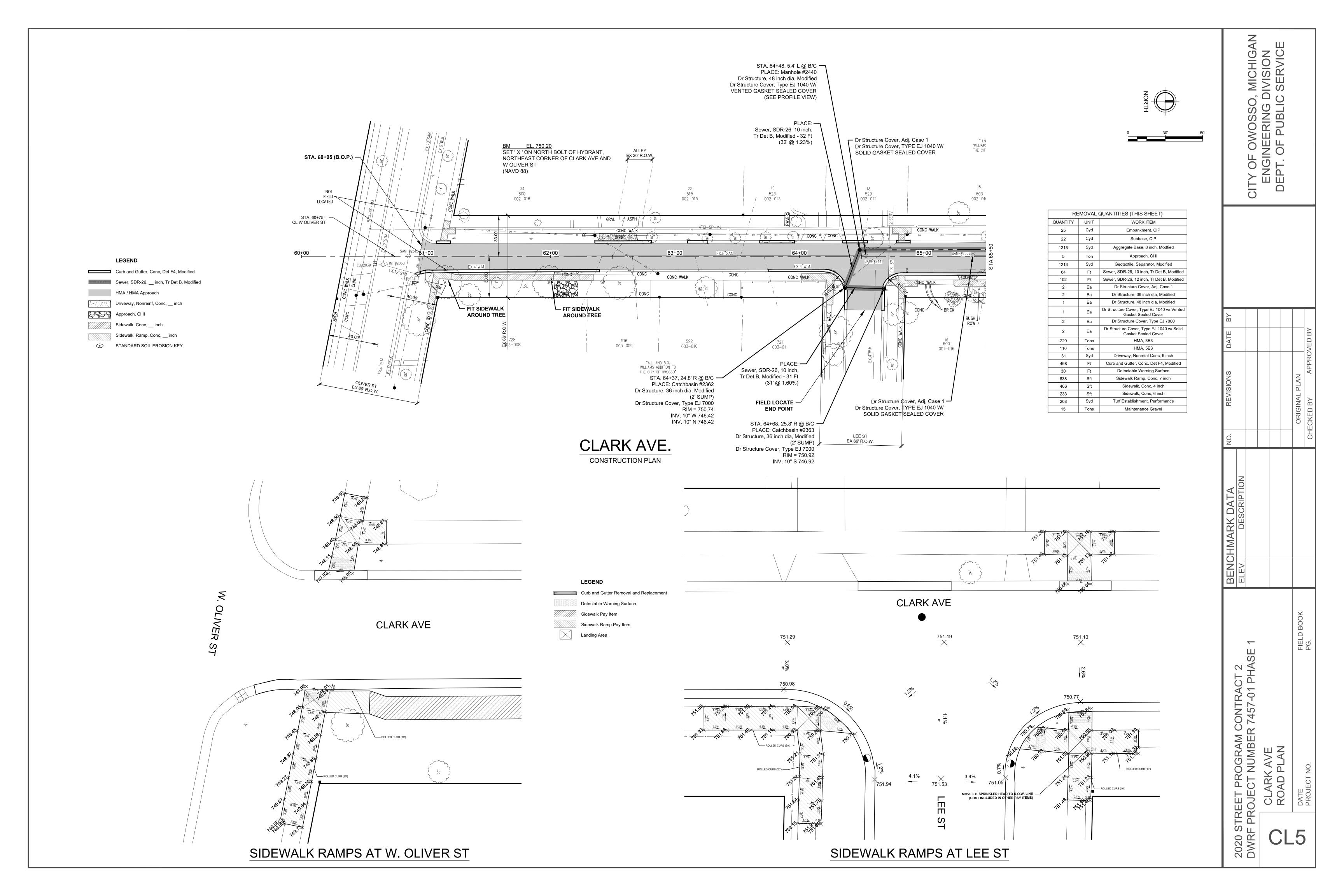
EX 66' R.O.W.

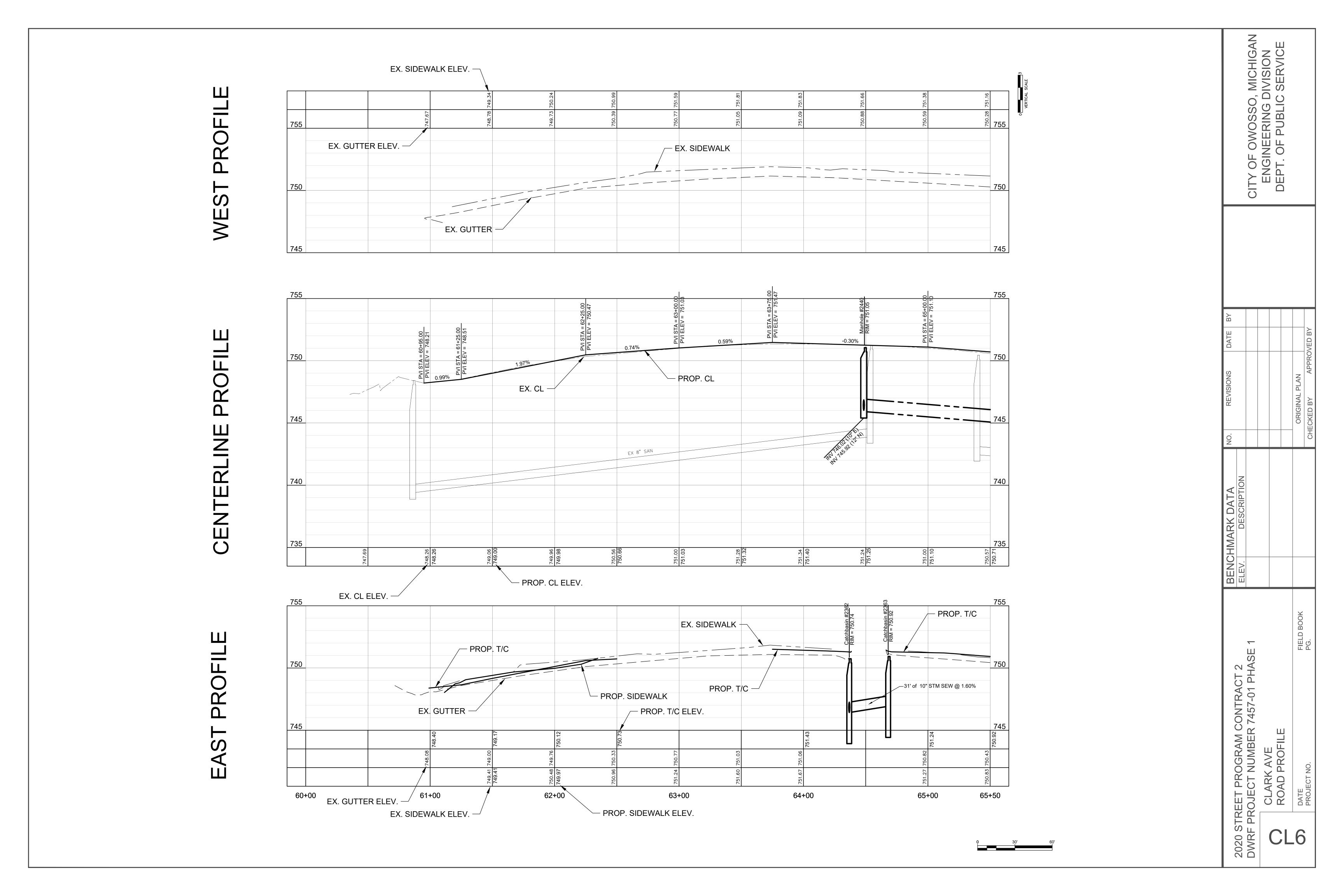
CITY OF OWOSSO, MICHIGAN ENGINEERING DIVISION DEPT. OF PUBLIC SERVICE BENCHMARK DATA
ELEV. DESCRIPTION 2020 STREET PROGRAM CONTRACT 2

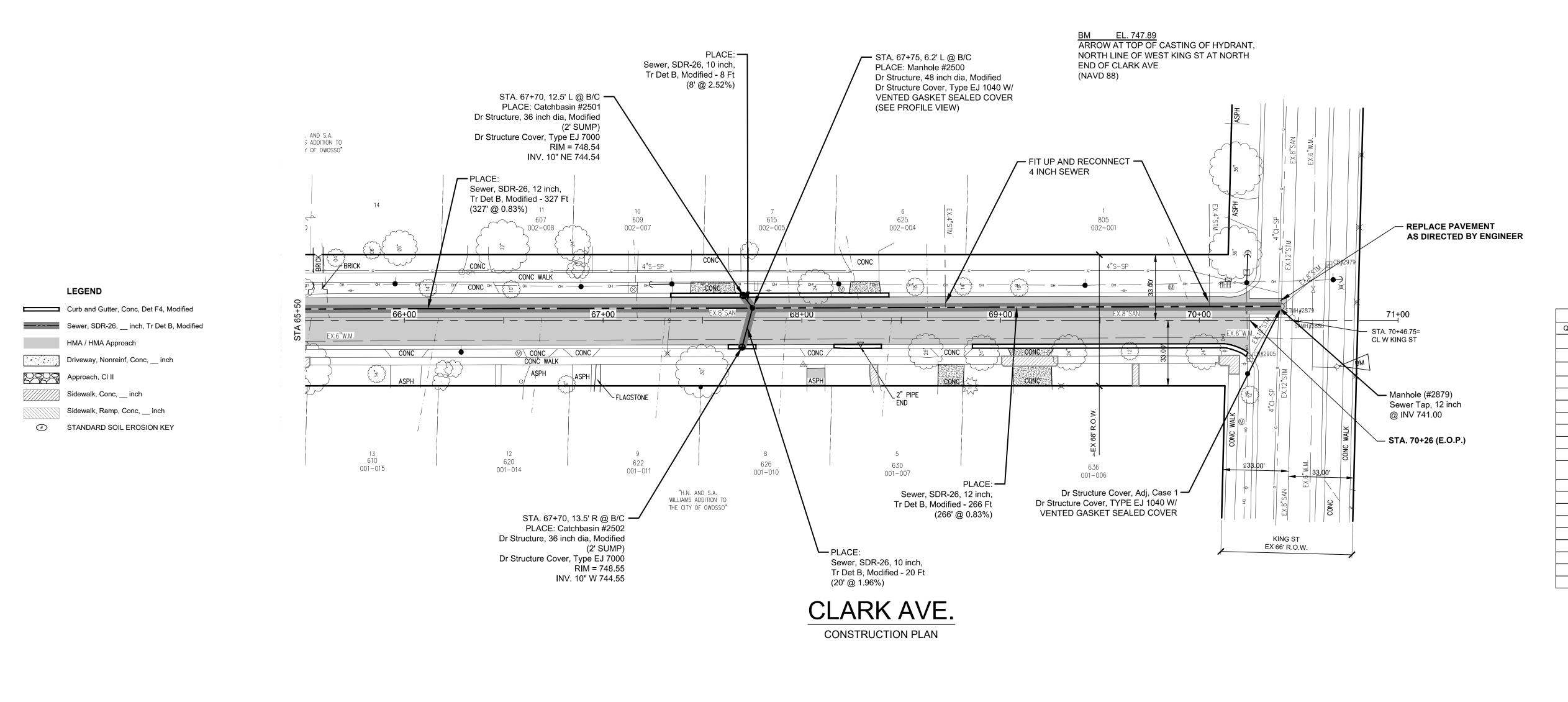
DWRF PROJECT NUMBER 7457-01 PHASE

CLARK AVENUE

REMOVAL PLAN







REMOVAL QUANTITIES (THIS SHEET) QUANTITY UNIT WORK ITEM Cyd Embankment, CIP 12 Subbase, CIP 1283 Aggregate Base, 8 inch, Modfied 1283 Geotextile, Separator, Modified Sewer Tap, 12 inch Sewer, SDR-26, 10 inch, Tr Det B, Modified Sewer, SDR-26, 12 inch, Tr Det B, Modified Dr Structure Cover, Adj, Case 1 Dr Structure, 36 inch dia, Modified Dr Structure, 48 inch dia, Modified Dr Structure Cover, Type EJ 1040 w/ Vented Gasket Sealed Cover Dr Structure Cover, Type EJ 7000 Ea 234 HMA, 3E3 Tons 117 Tons HMA, 5E3 69 Driveway, Nonreinf Conc, 6 inch 287 Curb and Gutter, Conc. Det F4, Modified 155 Sidewalk, Conc, 4 inch Sft 153 Sidewalk, Conc, 6 inch 128 Turf Establishment, Performance 15 Tons

BENCHMARK DATA
ELEV. DESCRIPTION

OF OWOSSO, MICHIGAN NGINEERING DIVISION PT. OF PUBLIC SERVICE

CITY

2020 STREET PROGRAM CONTRACT 2 DWRF PROJECT NUMBER 7457-01 PHASE

CLARK AVE ROAD PLAN

CITY OF OWOSSO, MICHIGAN ENGINEERING DIVISION DEPT. OF PUBLIC SERVICE EX. SIDEWALK ELEV. — EX. GUTTER ELEV. EX. SIDEWALK EX. GUTTER 745 745 EX. CL PROP. CL 745 BENCHMARK DATA
ELEV. DESCRIPTION 740 740 SEWER TAP, 12 INCH — @ INV 741.00 EX. CL ELEV. PROP. CL ELEV. EX. SIDEWALK -2020 STREET PROGRAM CONTRACT 2 DWRF PROJECT NUMBER 7457-01 PHASE EX. GUTTER 745 PROP. T/C CLARK AVE ROAD PROFILE PROP. T/C ELEV. EX. GUTTER ELEV. — 66+00 EX. SIDEWALK ELEV. \_\_\_\_\_67+00 71+00 65+50 68+00 69+00 70+00



## Construction Testing Services 3300 E. Bristol Road, Burton, MI 48529

PHONE: (810) 603-0766 FAX: (810) 603-0786

S-18-245 LOG OF SOIL BORING NO. 2 JOB NO. PROJECT:

City of Owosso 2019 Street Program

LOCATION: Owosso, Michigan

.,				DATE: 9/20/18 SU		ELE\	/ATION:	Е	xisting	)
Sample & Type	Depth	Legend		Soil Description		SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			5.5"	Asphalt		рсго		1 .0.1	ouorigar	
	1	\ /								
2.4		\ /			-					
2A SS	2	$\vee$		Clay - Stiff, Moist, Sandy, Variegated w/Green Tint & Veg	etation,	<u>2</u> 4				
- 33	3	$\wedge$		Possible Swamp Bottom	}	7				
					ľ					
	4		4'0"			_				
2B		\				6				
SS	5				-	<u>7</u> 11				
2C	6	X	Clay - Very Stiff, Moist, Variegated w/Pebble & Oxidation							
SS					ŀ	<u>8</u> 14				
	7		7'0"		Į	16				
				End of Boring						
	8				-					
	9				}					
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	10									
	4.4									
	11				-					
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	13									
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	18				ł					
	19									
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	20				}					
	21				ł					
TYPE (		MPLE		BORING PLUGGED WITH NATURAL SOIL	GROU	ND W	ATER OF	SERV	ATIONS	3
	DISTUR				W. ENCO					INS.
	INDIST. L SHELBY T			observations. No classification tests were performed.	W. ENCO					INS.
S.S S	SPLIT SP	POON		G.V	N. ON CC					INS.
	T.O NOON CORE							F	Т.	INS.
	THER -			140# Hammer Falling 30"; Count Made At 6" Intervals.   G.V	<u>w. Volui</u>	MES	None			



Construction Testing Services 3300 E. Bristol Road, Burton, MI 48529

> PHONE: (810) 603-0766 FAX: (810) 603-0786

S-18-245 LOG OF SOIL BORING NO. 3 JOB NO.

**PROJECT:** City of Owosso 2019 Street Program LOCATION: Owosso, Michigan

9/20/18 SURFACE ELEVATION: DATE: Existing

Unc. Comp. Strength Soil Description Wt. P.C.F. Legend Asphalt Clay - Firm, Moist, Sandy, Variegated w/Green Tint, Vegetation 1'9" & occ/Pebble, Possible Swamp Bottom 3 3B SS 5 6 Clay - Stiff to Very Stiff, Moist, Sandy, Variegated w/occ Pebble 3C SS 9 **End of Boring** 11 13 14 15 16 17 18 20 21 TYPE OF SAMPLE **BORING PLUGGED WITH NATURAL SOIL GROUND WATER OBSERVATIONS** D. - DISTURBED G.W. ENCOUNTERED AT \* The soil descriptions shown on the logs are from visual U.L. - UNDIST. LINER FT. G.W. ENCOUNTERED AT INS. observations. No classification tests were performed. S.T. - SHELBY TUBE G.W. ON COMPLETION FT. INS. S.S. - SPLIT SPOON Standard Penetration Test - Driving 2" OD Sampler 1' With FT. G.W. AFTER HOURS INS. R.C. - ROCK CORE 140# Hammer Falling 30"; Count Made At 6" Intervals. G.W. VOLUMES None OTHER -

ВУ					
DATE					APPROVED BY
REVISIONS				ORIGINAL PLAN	CHECKED BY APPRC
NO.				0	CHEC
BENCHMARK DATA	ELEV. DESCRIPTION				

2020 STREET PROGRAM CONTRACT 2

DWRF PROJECT NUMBER 7457-01 PHASE

CLARK AVENUE

SOIL BORINGS

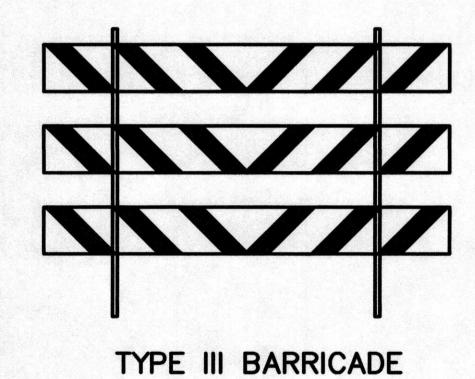
# CLARKAVENUE

WATER MAIN
CITY OF OWOSSO
2020 STREET PROGRAM CONTRACT 2

SHEET NO.	DESCRIPTION
CL10	CLARK AVE - WATER MAIN COVER SHEET & TRAFFIC CONTROL PLAN
CL11 - CL13	CLARK AVE - WATER MAIN PLAN AND PROFILE

ROAD CLOSED LOCAL TRAFFIC ONLY

R11-3a 60" x 30"

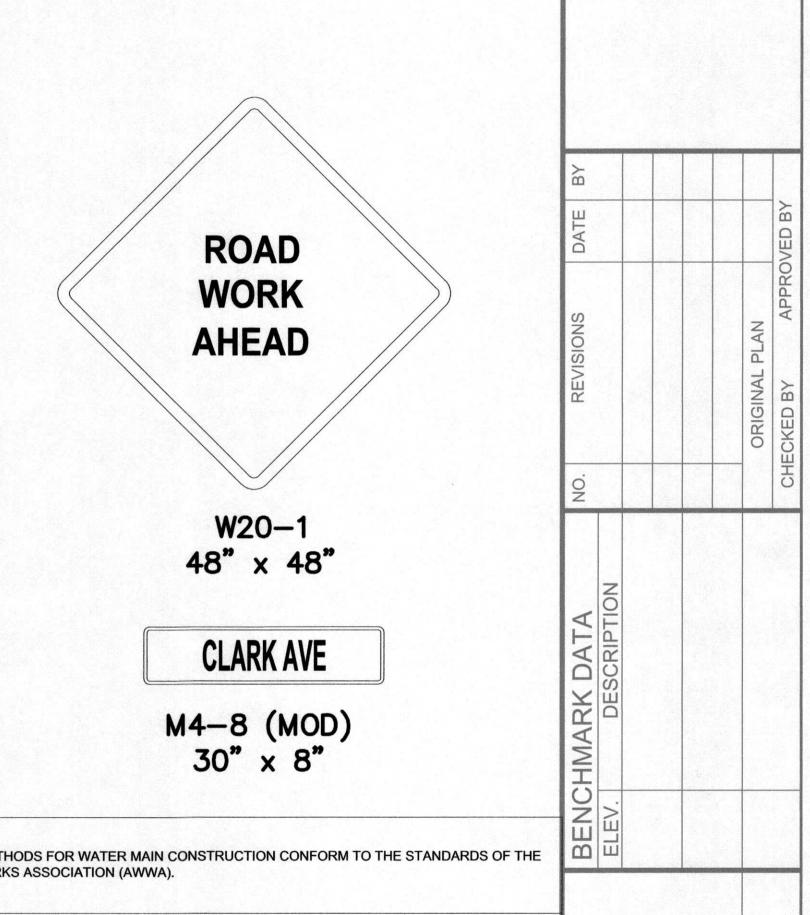




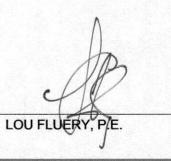
VICINITY MAP AND TRAFFIC CONTROL PLAN

CLARK AVE





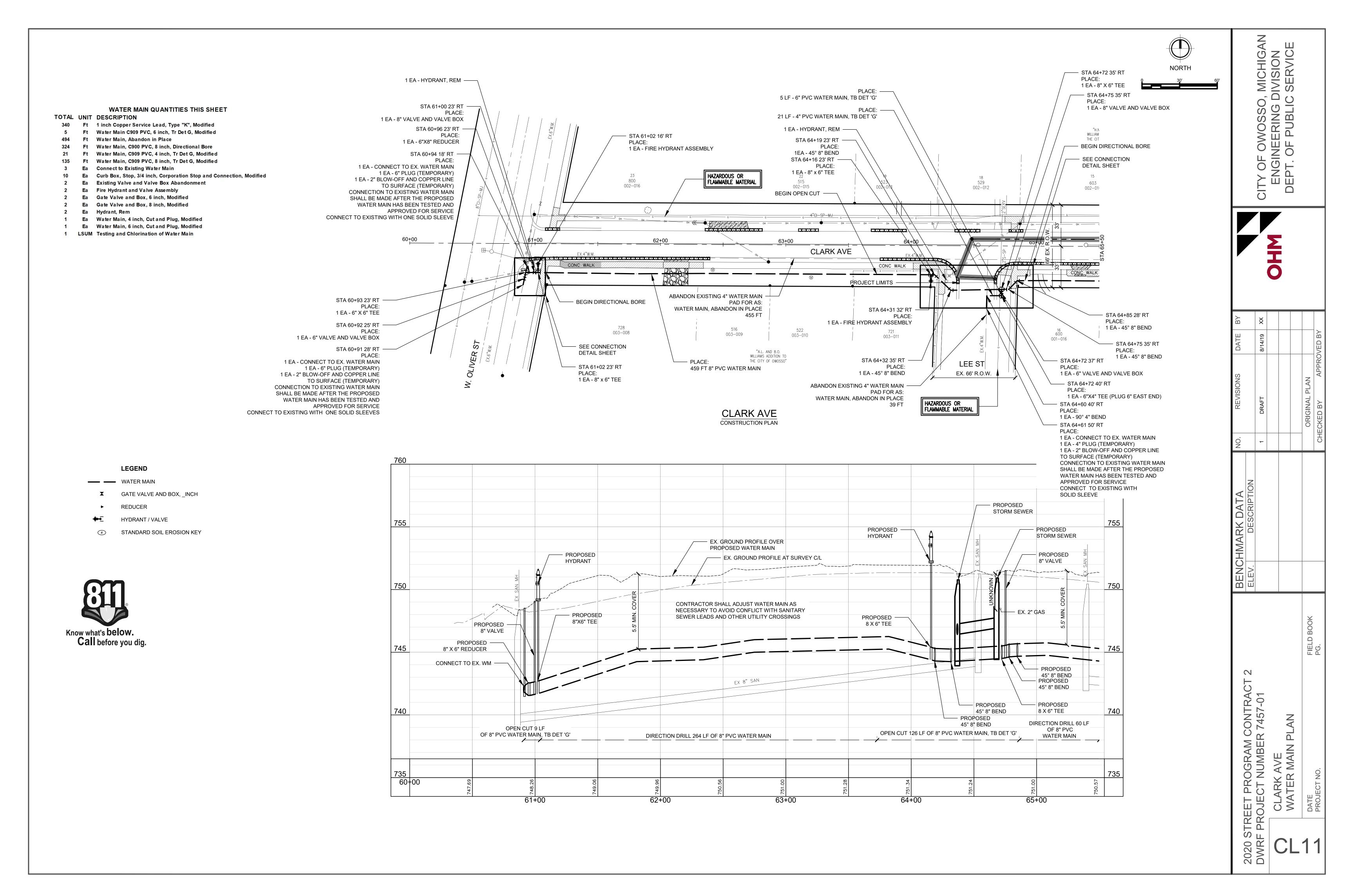
LOUIS P
FLEURY
ENGINEER
No.
6201048655

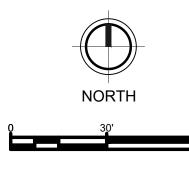


6201048655
REGISTRATION NUMBER

PREPARED FOR THE CITY OF OWOSSO BY:

11/7/19 DATE 2020 STREET PROC DWRF PROJECT NU CLARK A WATER N WATER N & TRAFF





STA 70+18 9' RT ----PLACE: 1 EA - 45° 8" BEND SEE CONNECTION —— **DETAIL SHEET** 

**LEGEND** 

GATE VALVE AND BOX, \_INCH

WATER MAIN QUANTITIES THIS SHEET

1 inch Copper Service Lead, Type "K", Modified

Water Main, C909 PVC, 8 inch, Tr Det G, Modified

Ea Curb Box, Stop, 3/4 inch, Corporation Stop and Connection, Modified

Ft Water Main, C900 PVC, 8 inch, Directional Bore

Ea Existing Valve and Valve Box Abandonment

Ea Water Main, 6 inch, Cut and Plug, Modified

Ft Water Main, Abandon in Place

Ea Connect to Existing Water Main

Ea Fire Hydrant and Valve Assembly

Ea Gate Valve and Box, 8 inch, Modified

LSUM Testing and Chlorination of Water Main

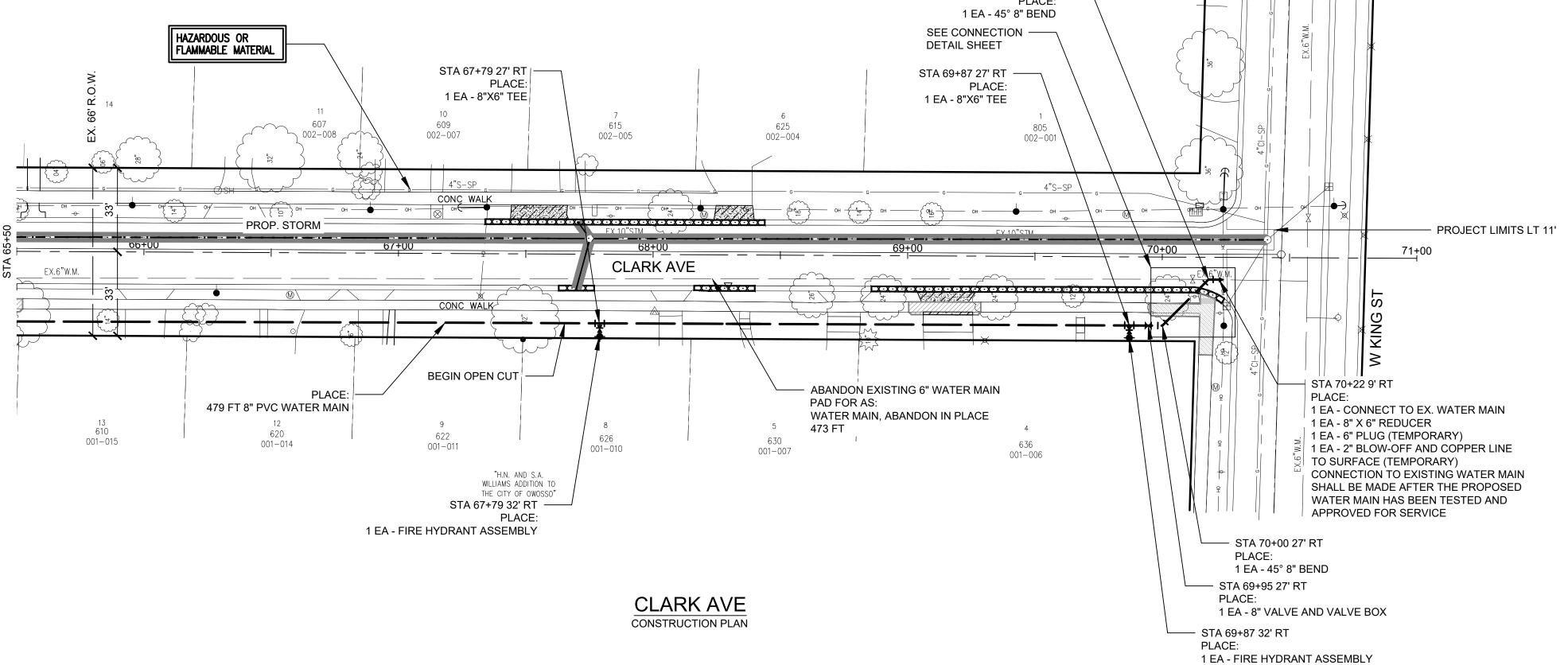
REDUCER

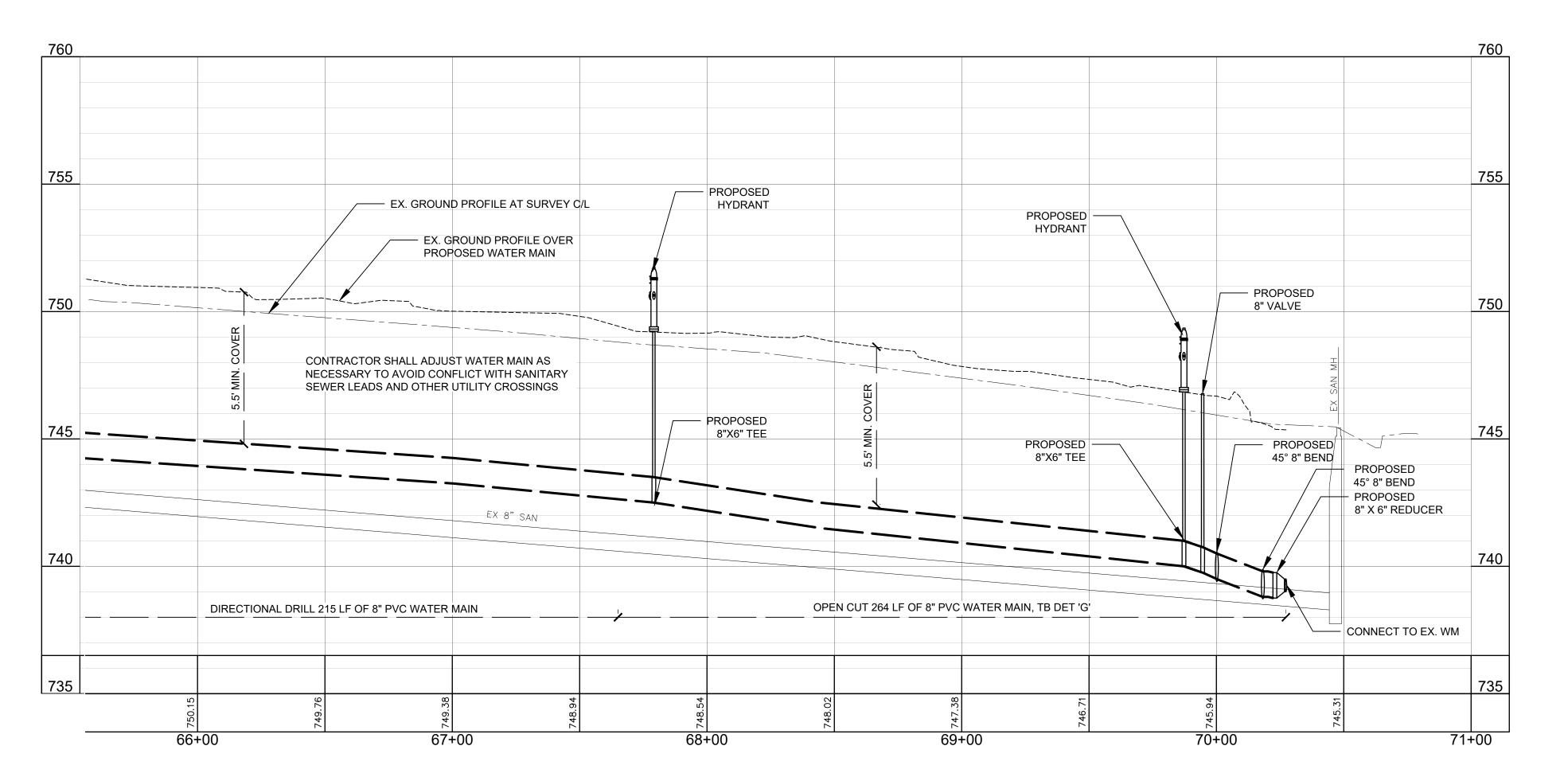
HYDRANT / VALVE

STANDARD SOIL EROSION KEY



TOTAL UNIT DESCRIPTION





CIT

TREET PROGRAM CONTRACT 2 PROJECT NUMBER 7457-01 PHASE

2020 ST DWRF I

